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ABSTRACT

Patterns and trends in the vocational-technical course taking of public high school graduates between 1982 and 1998 were examined in a study of high school transcripts for the graduating classes of 1982, 1990, 1992, 1994, and 1998. The source data came from the following five studies: (1) High School and Beyond Sophomore Cohort, First Follow-up Survey, (2) High School Transcripts Study, 1982; (3) National Education Longitudinal Study of 1988, Second Follow-up Survey; (4) High School Transcript Study, 1992; and (5) High School Transcript Studies of 1990, 1994, and 1998. The analysis revealed differences in participation in vocational-technical education based on the following variables: race/ethnicity; sex; disability status; English proficiency; academic achievement; and school urbanicity and poverty level. Generally, graduates took fewer vocational courses between 1982 and 1998, although their occupational course taking was relatively steady. Graduates with disabilities as of grade 12 took more vocational and occupational course work by the end of the period studied. Asians and Pacific Islanders and high academic achievers did not exhibit the declines in vocational course taking that were observed for other groups. (Fifty-four tables/figures are included. The bibliography lists 22 references. Appendixes constituting approximately 80% of the document contain the following items: 52 standard error tables; a glossary; and technical notes and a description of the study methodology.) (MN)

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DATA ON
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Public High School Graduates Who Participated in Vocational/Technical Education: 1982—1998

E.D. Tabs

U.S. Department of Education
Institute of Education Sciences
NCES 2003—024

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E.D. Tabs

July 2003

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Executive Summary

This report examines patterns and trends in the vocational/technical coursetaking of public high school graduates between 1982 and 1998. It updates and expands upon trends that were published in the National Center for Education Statistics (NCES) report *Vocational Education in the United States: Toward the Year 2000* (Levesque et al. 2000). Specifically, the current report includes trends in the participation of graduates based on their special and protected population status, including race/ethnicity, sex, disability status, English proficiency, and several measures of student academic achievement, as well as school urbanicity and school poverty level. The report analyzes these trends by examining high school transcripts for the graduating classes of 1982, 1990, 1992, 1994, and 1998.[1] The analysis samples and variables used in the report are comparable across the survey years. The analysis focuses on public high school graduates who earned regular or honors diplomas.[2]

Transcripts provide information on the courses that public high school graduates took in grades 9 through 12. For simplicity's sake, the report refers to this information as "high school coursetaking." With the exception of a few tables that examine coursetaking in each grade (9 through 12) separately, the report describes the cumulative coursework that graduates took in high school. The report is intended to accompany the NCES report *Trends in High School Vocational/Technical Coursetaking: 1982–1998* (Levesque 2003), which provides an in-depth examination of the vocational/technical coursetaking patterns of public high school graduates in general.

Terms Used in the Report

The Vocational/Technical Curriculum

The NCES Secondary School Taxonomy (SST) classifies high school vocational/technical education into three different curricula: specific labor market preparation, or "occupational education"; general labor market preparation; and family and consumer sciences education. Occupational education consists of courses that teach skills and knowledge required in a particular occupation or set of related occupations. General labor market preparation consists of courses that teach general employment skills that are not specific to one occupational area, such as basic typewriting/

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[1] These transcript studies were conducted as part of the High School and Beyond Longitudinal Study of 1980 Sophomores, "High School Transcript Study" (HS&B-So:80/82) regarding 1982 graduates; the National Education Longitudinal Study of 1988 (NELS:88/92), "Second Follow-up, Transcript Survey, 1992" regarding 1992 graduates; and the High School Transcript Studies (HSTS) of 1990, 1994, and 1998 regarding 1990, 1994, and 1998 graduates, respectively.

[2] The HS&B and NELS studies excluded students with the most severe disabilities, where it was determined by school staff that these students were unable to complete the lengthy student questionnaires that were a part of these studies. In order to ensure comparability across the data sets, graduates with special education diplomas were excluded from the HSTS samples (Gifford et al. 1989; Tuma 1996). Thus, the samples used for this trend analysis were consistent with the population of public high graduates, including students with disabilities, who earned regular or honors diplomas in each of the study years. In addition, there may be some minor coding differences between NELS and the other transcript data that may affect the data for 1992. See appendix C for more information.

keyboarding, introductory technology education, and career preparation and general work experience courses. Family and consumer sciences education consists of courses intended to prepare students for family and consumer roles outside the paid labor market.[3] For purposes of this report, trends focus on vocational/technical coursetaking overall and on occupational coursetaking.

Although vocational/technical coursetaking is prevalent in high schools, students take varying amounts and types of these courses and take them for different purposes. This report emphasizes the coursetaking patterns of occupational concentrators because this group is a common focus of federal and state accountability and research efforts for vocational/technical education (U.S. Department of Education 2002; Silverberg et al. 2002). Occupational concentrators are graduates who earned 3.0 or more credits during high school in one of the following 10 broad occupational program areas: agriculture, business, marketing, health care, protective services, trade and industry, technology, food service and hospitality, child care and education, and personal and other services. In some cases, the report also examines trends in concentrating (earning 3.0 or more credits) in 18 narrow occupational program areas.[4]

Key Population Variables

The Carl D. Perkins Vocational and Applied Technology Education Amendments of 1998 (1998 Perkins Act) defines "special populations" as follows:

- individuals with disabilities;
- individuals from economically disadvantaged families, including foster children;
- individuals preparing for occupations that are nontraditional for their gender;
- single parents, including single pregnant women;
- displaced homemakers; and
- individuals with other barriers to educational achievement, including individuals with limited English proficiency.

The 1990 Perkins Act, which governed the second half of the period covered in this report (1990–1998), defined "special populations" fairly similarly, including individuals with handicaps, educationally and economically disadvantaged individuals (including foster children), individuals of limited English proficiency, individuals who participate in programs designed to eliminate sex bias, and individuals in correctional institutions.

In addition, the Office for Civil Rights (2001) in the U.S. Department of Education enforces federal statutes that prohibit discrimination in education programs and activities receiving federal financial assistance (such as Perkins Act funds) on the following bases: race, color, national origin, sex, disability, and age.

To the extent possible, this report provides information on trends in the vocational/technical coursetaking of these special and protected populations, as well as their peers who were not members of these groups. To do so, the report uses the following categories. Measures were selected based on federal definitions, previous related research, and data availability. Data were provided only for those years and surveys that contained comparable variables. For the sake of readability when summarizing findings, the report uses the terms *disadvantaged* and *advantaged* to describe student groups on some of the key variables, as indicated below.[5]

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[3] Home economics-related courses that prepare students for the paid labor market are included under occupational education.

[4] These include agriculture, business services, business management, marketing, health care, protective services, construction, mechanics and repair, print production, materials production, other precision production, transportation, computer technology, communications technology, other technology, food service and hospitality, child care and education, and personal and other services.

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Race/ethnicity. Includes the five categories of American Indian/Alaska Native; Asian/Pacific Islander; Hispanic; non-Hispanic Black; and non-Hispanic White. For simplicity's sake, the text refers to Black and White graduates, although students in both of these groups were also non-Hispanic.

Sex. Includes the two categories of male and female.

Disability status (grade 12). Includes students who were reported to have a disability and students who were reported to have no disability as of grade 12. It should be remembered, however, that graduates with the most severe disabilities were excluded from the analysis due to survey constraints. Consequently, the disability status variable identifies students with and without disabilities among the population of public high school graduates who earned regular or honors diplomas.[6] For purposes of this analysis, students with disabilities were considered to be "disadvantaged," while students without disabilities were considered to be more "advantaged."

English proficiency (grade 12). Includes the two categories of limited English proficiency and English proficient. It is important to note that this variable describes students' English language proficiency as of grade 12. For purposes of this analysis, graduates who had limited English proficiency in grade 12 were considered to be "disadvantaged," while graduates who were English proficient in grade 12 were considered to be more "advantaged."

The report uses the following three measures of academic achievement.[7]

Grade-point average (GPA). Calculated from grades recorded in the transcript files, this variable has a range of 0.0 to 4.0. It was not possible in some of the surveys to calculate GPA for academic courses only (a preferable measure of academic achievement), so overall GPA was used. GPA was collapsed into the three categories: high GPA (greater than 3.5); mid-level GPA (2.0 to 3.5); and low GPA (less than 2.0). For purposes of this analysis, students with a GPA of less than 2.0 were considered to be "disadvantaged"; students with a GPA of 2.0 to 3.5 were considered to be "moderately advantaged"; and students with a GPA of greater than 3.5 were considered to be "highly advantaged."

Academic coursework completed. This variable describes whether students completed all low or all high mathematics, science, and English courses, or some other combination of mathematics, science, and English courses

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[5] In a few cases, *advantaged* students were further classified as *moderately advantaged* and *highly advantaged*. The race/ethnicity and sex categories were not classified according to advantage, because the Perkins legislation did not make this distinction for these variables.

[6] As of 1998, about 31 percent of students with disabilities held special education diplomas and were excluded from the study.

[7] The final federal regulations to the 1990 Perkins Act used grade-point average to define academically disadvantaged individuals. The other two measures were suggested by previous research on whether vocational education has been a "dumping ground" for low academically achieving students (Boesel et al. 1994). The 1998 Perkins Act offered no additional guidance for identifying students with barriers to educational achievement, other than limited English proficiency.

(mid-level or mixed academic coursetaking). Low and high mathematics, science, and English courses are defined in the glossary (appendix B) and technical appendix (appendix C). For purposes of this analysis, students completing all low-level academic coursework were considered to be "disadvantaged"; students completing all high-level academic coursework were considered to be "highly advantaged"; and students completing mid-level or mixed academic coursework were considered to be "moderately advantaged."

Grade 9 mathematics. This variable identifies the mathematics course a student took in grade 9. It includes the three categories of high-level grade 9 mathematics (geometry or higher), mid-level grade 9 mathematics (pre-algebra or algebra 1), and low-level mathematics (no mathematics or mathematics courses below pre-algebra). It provides a measure of academic achievement before most of graduates' coursework in vocational/technical education was taken and is therefore less confounded than either GPA or academic coursework completed with that coursetaking. For purposes of this analysis, students who took low-level mathematics in grade 9 were considered to be "disadvantaged"; students who took mid-level grade 9 mathematics were considered to be "moderately advantaged"; and students who took high-level grade 9 mathematics were considered to be "highly advantaged."

Although a student-level measure of socioeconomic status would have been preferable for this analysis, such a variable was not available from the 1990, 1994, and 1998 High School Transcript Studies (HSTS). Instead, the report uses the following two school-level variables as measures of economic status.[8]

School urbanicity. This variable describes the location of the school a graduate attended in the 12th grade and includes the three categories of urban, suburban, and rural. These categories are defined further in the glossary (appendix B) and technical appendix (appendix C).

School poverty level. This variable describes the proportion of students in the school a graduate attended in the 12th grade who participated in the National School Lunch Program (NSLP). It includes the categories of high poverty (greater than 50 percent in NSLP) and low poverty (5 percent or less in NSLP), with a middle group having greater than 5 to 50 percent of students in NSLP. This variable also includes a category for students whose schools did not report their participation in NSLP. For purposes of this analysis, students in high-poverty schools were considered to be "disadvantaged," while students in low-poverty schools were considered to be "highly advantaged." The middle group was considered to be of mixed advantage. The variable is defined further in the glossary (appendix B) and technical appendix (appendix C).

It should be remembered that there may be a fairly high correlation among some of these population variables. The report did not attempt to isolate the unique contribution of each factor to participation in vocational/technical education. Instead, the report describes bivariate relationships according to NCES standards for this type of analysis. See appendix C for additional information on the technical methodology used in the report.

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[8] Section 421 of the 1990 Perkins Act included information on students in rural and urban areas in its identification of economically disadvantaged students. The final regulations to the 1990 Perkins Act also included eligibility for the National School Lunch Program in the definition of this group. The 1998 Perkins Act provided no additional guidance on defining economically disadvantaged students.

Vocational/Technical Coursetaking in 1998

Overall Patterns Among 1998 Graduates

Although most 1998 public high school graduates took at least some vocational/technical and occupational coursework, graduates who were members of disadvantaged groups generally took more vocational/technical and occupational coursework and were more likely to concentrate in occupational education than their counterparts who were members of more advantaged groups. These differences were apparent with regard to disability status in grade 12, GPA, academic coursework completed, grade 9 mathematics, and school poverty. One exception was that students who had limited English proficiency in grade 12 generally took less vocational/technical and occupational coursework and were less likely to concentrate in occupational education than their English proficient peers.

In addition, male graduates took more vocational/technical and occupational coursework than female graduates, and students in rural schools took more such coursework than students in either urban or suburban schools. In contrast, Asians/Pacific Islanders generally took less vocational/technical and occupational coursework than graduates in other racial/ethnic groups, particularly Black and White graduates.

Characteristics of Occupational Concentrators From the Class of 1998

Although disadvantaged students were more likely to participate in vocational/technical education in general, and to concentrate in occupational education in particular, these students represented a minority of all occupational concentrators. In fact, when students were classified into three groups (low-, moderate- or middle-, and high-advantage), the majority of occupational concentrators (about 60 percent or more) came from the middle groups. This pattern was apparent with regard to GPA, academic coursework completed, grade 9 mathematics, and school poverty. In each case, either occupational concentrators were more likely to be from the middle groups than was the 1998 public high school class as a whole, or no significant difference was detected in the proportion of occupational concentrators and all graduates who were from these groups. Moreover, no significant difference was detected in the proportion of occupational concentrators and all graduates who were from the lowest academic achievement groups. However, occupational concentrators were less likely than the 1998 graduating class as a whole to be from the highest academic achievement groups.

In the cases of disability status and English proficiency in grade 12, most occupational concentrators (more than 95 percent) came from advantaged (rather than disadvantaged) groups. While a larger proportion of occupational concentrators than the 1998 graduating class as a whole were disabled in grade 12, the proportion of occupational concentrators who had limited English proficiency in grade 12 was lower than that for all 1998 graduates.

The majority of occupational concentrators (more than 50 percent) were White and were male. In fact, occupational concentrators were more likely to be male than the 1998 graduating class as a whole.[9] With regard to school urbanicity, no school type enrolled a majority of occupational concentrators. However, occupational concentrators were more likely to attend rural schools than urban schools.[10]

While academically disadvantaged graduates were more likely than their more advantaged peers to concentrate in occupational education generally, this pattern was reversed to some extent in certain occupational program areas. Notably, higher achieving students were somewhat more likely than their lower achieving peers to concentrate in communications technology.

Trends in Vocational/Technical Coursetaking: 1982 to 1998[11]

The average number of credits graduates earned in vocational/technical education declined from 1982 to 1990, after which no significant changes were detected. One question of interest to policymakers is whether these declines occurred across the board or only among certain subgroups of students.

Most often, vocational/technical coursetaking declines occurred among groups earning numbers of vocational/technical credits that were not statistically different from the average for all 1982 graduates. In comparison, there were few significant changes detected in the average number of vocational/technical credits earned by several groups that earned *above*-average numbers of vocational/technical credits in 1982. At the same time, there were no significant changes detected between 1982 and 1998 in the average number of vocational/technical credits earned by several groups that earned *below*-average numbers of vocational/technical credits in 1982 compared with all 1982 graduates.

As a consequence of these changes, there were few shifts among subgroups of graduates with regard to their relative vocational/technical coursetaking patterns over the period studied. That is, most groups that earned above-average numbers of vocational/technical credits in 1982 still earned above-average numbers of such credits as of 1998 (including low academic achievers and students attending rural schools). In addition, all groups that earned below-average numbers of vocational/technical credits in 1982 still earned below-average numbers of such credits as of 1998 (including Asians/Pacific Islanders and high academic achievers). Finally, despite the coursetaking declines noted above, most groups that earned numbers of vocational/technical credits in 1982 that were not statistically different from the average for all 1982 graduates were also in this middle coursetaking group as of 1998.

In contrast to declines in vocational/technical coursetaking, there was no statistically significant change between 1982 and 1998 in the average number of occupational credits that graduates earned in high school. However, trends varied somewhat among student groups. For example, students with disabilities as of grade 12 took the equivalent of about one additional full-year occupational course, while Hispanic graduates took about one-half fewer occupational courses, by the end of the period.

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[9] No significant difference was detected in the proportions of occupational concentrators and all 1998 graduates who were White.

[10] No significant difference was detected in the proportion of occupational concentrators who attended suburban schools and those who attended schools in other locales. In addition, no significant difference was detected between occupational concentrators and all 1998 graduates based on school urbanicity.

[11] Because data for 1982 were not available, trends between 1982 and 1998 could not be determined with regard to English proficiency in grade 12 and school poverty.

Trends in Occupational Concentrating

The percentage of public high school graduates who concentrated in occupational education declined from 33.7 percent in 1982 to 27.8 percent in 1990, after which no significant changes were detected. However, trends varied among student groups. Similar to the vocational/technical course-taking changes noted above, declines in occupational concentration rates occurred most often among groups with concentration rates in 1982 that were not statistically different from the average for all 1982 graduates. In addition, there were few significant changes detected between 1982 and 1998 in the concentration rates for several groups that exhibited *below*-average occupational concentration rates in 1982 compared with all 1982 graduates.

As a consequence of these changes, most subgroups of graduates kept their relative occupational concentration status over the period studied. That is, most groups that exhibited *above*-average occupational concentration rates in 1982 still concentrated in occupational education at above-average rates as of 1998 (including males and students completing all low academic coursework in high school). In addition, most groups that exhibited *below*-average occupational concentration rates in 1982 still concentrated in occupational education at below-average rates as of 1998 (including females and high academic achievers). Finally, most groups that exhibited occupational concentration rates in 1982 that were not statistically different from the average for all 1982 graduates were also in this middle occupational concentrating group as of 1998.

Trends in occupational concentrating also varied by program area. For example, while most student groups were more likely to concentrate in communications technology in 1998 than in 1982, no significant changes in concentration rates in this program area were detected over this period among Blacks, Hispanics, students with disabilities as of grade 12, students taking low-level mathematics in grade 9, and students in urban schools. In addition, while no differences were detected between 1982 and 1998 in overall rates of concentrating in marketing, print production, and computer technology, these program areas attracted somewhat higher academically achieving students over the period.

Gaps in Occupational Concentration Rates

Occupational concentration rates in specific program areas often varied by student race/ethnicity, sex, and disability status. Most differences in occupational concentration rates among racial/ethnic groups in 1982 were no longer detected by 1998. In contrast, most 1982 differences between males and females persisted as of 1998. However, some of these gender gaps decreased, particularly in business services where male graduates increased their concentration rate over the period. With regard to disability status in grade 12, in no program areas were students with disabilities more likely to concentrate than students without disabilities in 1982.[12] However, by 1998, students with disabilities as of grade 12 were more likely than those without to concentrate in agriculture, construction, mechanics and repair, and materials production.

Trends in the Characteristics of Occupational Concentrators

Some changes in the characteristics of occupational concentrators were consistent with changes in the student body in general between 1982 and 1998. For example, both graduates in general and occupational concentrators in particular became more academically advantaged by 1998. However, the shift toward moderate academic achievement was greater for occupational concentrators than for the larger group of graduates.

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[12] In fact, students with disabilities were *less* likely than those without to concentrate in business services and in communications technology in 1982. However, these gaps were no longer detected as of 1998.

Computer-Related Coursetaking

The SST currently includes all computer-related courses (including those taught in mathematics and computer science departments) under the vocational/technical curriculum. The report focused on overall computer-related coursetaking for the period 1990 to 1998, as well as on coursetaking in the typewriting/keyboarding, computer-related business services, and computer technology areas.

Computer-Related Coursetaking Among 1998 Graduates

The 1998 public high school graduates took the equivalent of about one full-year computer-related course on average during high school. Graduates with disabilities as of grade 12 took *less* computer-related coursework overall than their 1998 counterparts without such disabilities. In addition, graduates in low-poverty schools took less computer-related coursework than their counterparts in higher poverty schools. In contrast, graduates who were moderate academic achievers, who attended rural schools, or who were Black took *more* computer-related coursework overall than their 1998 peers who were lower academic achievers, who attended urban or suburban schools, or who were Asian/Pacific Islander, respectively. Generally, there was mixed evidence about the relationship between student advantage and the amount of computer-related coursework taken by 1998 graduates.

Trends in Computer-Related Coursetaking

There were no significant changes in overall computer-related coursetaking between 1990 and 1998, although coursetaking declined in typewriting/keyboarding over the same period. In addition, trends varied somewhat among student groups. Compared to their 1990 peers, 1998 graduates who had disabilities in grade 12 or who were male took *more* computer-related coursework overall and in business services. In addition, 1998 graduates with disabilities in grade 12 took more computer technology coursework than their 1990 peers. In contrast, 1998 graduates who were female took *less* computer-related coursework overall than their 1990 peers.

Combining Vocational/Technical and Academic Coursetaking

Several pieces of federal legislation in the 1990s focused attention on increasing the academic achievement of participants in vocational/technical education, including the Carl D. Perkins Vocational and Applied Technology Education Act Amendments of 1990 and 1998 and the School-to-Work Opportunities Act of 1994. Consequently, the report examined some of the ways that public high school graduates combined academic and vocational/technical education between 1982 and 1998, focusing primarily on the academic coursetaking of occupational concentrators.

Core Academic Coursetaking Among 1998 Graduates

For most identified student groups, 1998 graduates in general earned more credits in core academic subjects (English, mathematics, science, and social studies) than occupational concentrators. However, there were no significant differences between occupational concentrators and the larger group of 1998 graduates in the numbers of core academic credits earned by the subsets of students who were from racial/ethnic minorities, who had disabilities as of grade 12, who completed either all low- or all high-level academic coursework in high school, who took high-level mathematics coursework in grade 9, or who attended urban or high-poverty schools.

Among the class of 1998, occupational concentrators who were members of more advantaged groups generally earned more core academic credits than occupational concentrators who were less advantaged. This was true with regard to disability status in grade 12, GPA, academic coursework completed, and grade 9 mathematics. However, no significant differences were detected among occupational concentrators with regard to school poverty level or school urbanicity. In addition, occupational concentrators who were Asian/Pacific Islander and were female earned more core academic credits than occupational concentrators who were members of other racial/ethnic groups and were male, respectively. All of these 1998 patterns for occupational concentrators held as well for the larger group of public high school graduates.

Trends in Core Academic Coursetaking

Both the larger group of 1998 public high school graduates and the subset of these graduates who were occupational concentrators earned more core academic credits than their 1982 counterparts, regardless of their special or protected population status. For every identified student group, there was no significant difference in the rates of increase over the period in the number of core academic credits earned by all graduates compared with occupational concentrators.

Among both the larger group of public high school graduates and the subset of these graduates who were occupational concentrators, increases between 1982 and 1998 in core academic credits earned were smaller for students with disabilities in grade 12, American Indians/Alaska Natives, and males than for students without disabilities in grade 12, Hispanics, and females, respectively.

Conclusion

Various federal legislation is concerned with the participation of special and protected populations in education programs. This report examined the participation of public high school graduates in vocational/technical education between 1982 and 1998, focusing on the participation of graduates based on their special and protected population status.

Trends in participation for most subgroups reflected overall trends for graduates. Generally, graduates took fewer vocational courses between 1982 and 1998, although their occupational coursetaking was relatively steady. The percentage of graduates concentrating in occupational education (earning 3.0 or more credits in one of the 10 broad occupational program areas cited in the report) also declined over the period.

A few groups of graduates exhibited exceptions to these general trends, however. In particular, graduates with disabilities as of grade 12 took more vocational and occupational coursework by the end of the period studied. In addition, Asians/Pacific Islanders and high academic achievers earned numbers of vocational credits and exhibited occupational concentration rates at the end of the period that were not statistically different from corresponding figures for 1982. Thus, these latter groups did not exhibit the usual declines. Both Asians/Pacific Islanders and high academic achievers participated in vocational/technical education at below-average rates at the beginning of the period.

As of 1998, there were differences in participation in vocational/technical education on all of the variables examined in the report: race/ethnicity, sex, disability status, English proficiency, academic achievement, and school urbanicity and poverty level. In particular, groups exhibiting relatively high levels of participation in vocational/technical education in comparison with their peers included males, graduates with disabilities as of grade 12, low academic achievers, and graduates in rural and in high-poverty schools. In contrast, females, Asians/Pacific Islanders, and graduates who had limited English proficiency as of grade 12 exhibited relatively low levels of such participation.

With regard to computer-related coursetaking, groups exhibiting relatively low levels of participation in comparison with their 1998 peers included students with disabilities as of grade 12, low academic achievers, Asians/Pacific Islanders, and students in low-poverty and in urban and suburban schools. Among these groups, 1998 graduates who had disabilities as of grade 12 and graduates who were low academic achievers also earned fewer core academic credits than their more advantaged counterparts. However, 1998 graduates who were Asian/Pacific Islander as well as female graduates earned relatively large numbers of core academic credits in comparison with their peers. All of these core academic coursetaking patterns also held for the subset of graduates who were occupational concentrators.

On measures that classified students into three levels of advantage (low-, moderate- or middle-, and high-advantage), most occupational concentrators were from the middle groups. In some cases, occupational concentrators were more likely to be from the middle groups than was the 1998 public high school class as a whole. Although no significant difference was detected in the proportion of occupational concentrators and all graduates who were from the lowest academic achievement groups, occupational concentrators were less likely than the 1998 graduating class as a whole to be from the highest academic achievement groups.

Foreword

In 1987, the National Center for Education Statistics (NCES) instituted a new approach to collecting and reporting data on vocational education. Under the new approach, vocational education data are collected primarily through general purpose surveys—including high school transcript studies—rather than separate vocational education questionnaires or studies. This arrangement allows NCES to situate vocational education activities within the broader education context. In 1998, a Technical Review Panel was formed to provide NCES with regular input on its Data on Vocational Education (DOVE) program, including surveys and reports.

This report updates and expands upon trends in vocational/technical coursetaking that were published in the NCES report *Vocational Education in the United States: Toward the Year 2000* (Levesque et al. 2000). Specifically, the current report examines patterns and trends in the vocational/technical coursetaking of public high school graduates between 1982 and 1998, based on their special and protected population status. This report is intended to accompany the NCES report *Trends in High School Vocational/Technical Coursetaking: 1982–1998* (Levesque 2003), which provides an in-depth examination of the vocational/technical coursetaking trends of public high school graduates in general.

Information on NCES' DOVE program and publications may be found at the following web site: *http://nces.ed.gov/surveys/dove*. Your comments about NCES vocational education publications are welcome and may be sent to Lisa Hudson, NCES, 1990 K Street NW, Suite 900, Washington, DC 20006 or lisa.hudson@ed.gov.

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I. Introduction

Purpose of the Report

The Carl D. Perkins Vocational and Applied Technology Education Amendments of 1998 (1998 Perkins Act) requires that the National Center for Education Statistics (NCES) collect and report information on vocational/technical education as part of its assessments. This report updates and expands upon trends in vocational/technical coursetaking that were published in the NCES report *Vocational Education in the United States: Toward the Year 2000* (Levesque et al. 2000). Specifically, the current report examines patterns and trends in the vocational/technical coursetaking of public high school graduates between 1982 and 1998, based on their special and protected population status. This report is intended to accompany the NCES report *Trends in High School Vocational/Technical Coursetaking: 1982–1998* (Levesque 2003), which provides an in-depth examination of the vocational/technical coursetaking trends of public high school graduates in general.

The 1998 Perkins Act defines "special populations" as follows:

- individuals with disabilities;
- individuals from economically disadvantaged families, including foster children;
- individuals preparing for occupations that are nontraditional for their gender;
- single parents, including single pregnant women;
- displaced homemakers; and
- individuals with other barriers to educational achievement, including individuals with limited English proficiency.

The 1990 Perkins Act, which governed the second half of the period covered in this report (1990–1998), defined "special populations" fairly similarly, including individuals with handicaps, educationally and economically disadvantaged individuals (including foster children), individuals of limited English proficiency, individuals who participate in programs designed to eliminate sex bias, and individuals in correctional institutions.

In addition, federal statutes protect against discrimination in education programs and activities receiving federal financial assistance (such as Perkins Act funds) on the basis of race, color, national origin, sex, disability, and age (Office for Civil Rights 2001). For purposes of this report, "protected populations" include American Indians/Alaska Natives, Asians/Pacific Islanders, Hispanics, and non-Hispanic Blacks; females; and students with disabilities. To the extent possible, this report provides information on trends in the vocational/technical coursetaking of these special and protected populations, as well as their peers who were not members of these groups.

Description of the Data

This report analyzes trends in vocational/technical coursetaking by examining high school transcripts for the graduating classes of 1982, 1990, 1992, 1994, and 1998.[1] The analysis samples and variables used in the report are comparable across the survey years. The analysis focuses on public high school graduates who earned regular or honors diplomas.[2] A detailed description of the data surveys and the rules for including students in the analysis population are provided in appendix C.

Transcripts provide information on the courses that public high school graduates took in grades 9 through 12. For simplicity's sake, the report refers to this information as "high school coursetaking." With the exception of tables 7–10, which examine coursetaking in each grade (9 through 12) separately, the report describes the cumulative coursework that graduates took in high school.

Researchers assigned codes to each course on a transcript according to the Classification of Secondary School Courses (CSSC) (Westat 1992). This report then used the Secondary School Taxonomy (SST) to classify these codes into broader course groupings (Bradby and Hoachlander 1999). As figure 1 shows, the SST classifies high school courses into three main curricular areas (academic, vocational/technical, and enrichment/other) and their subareas. The same course

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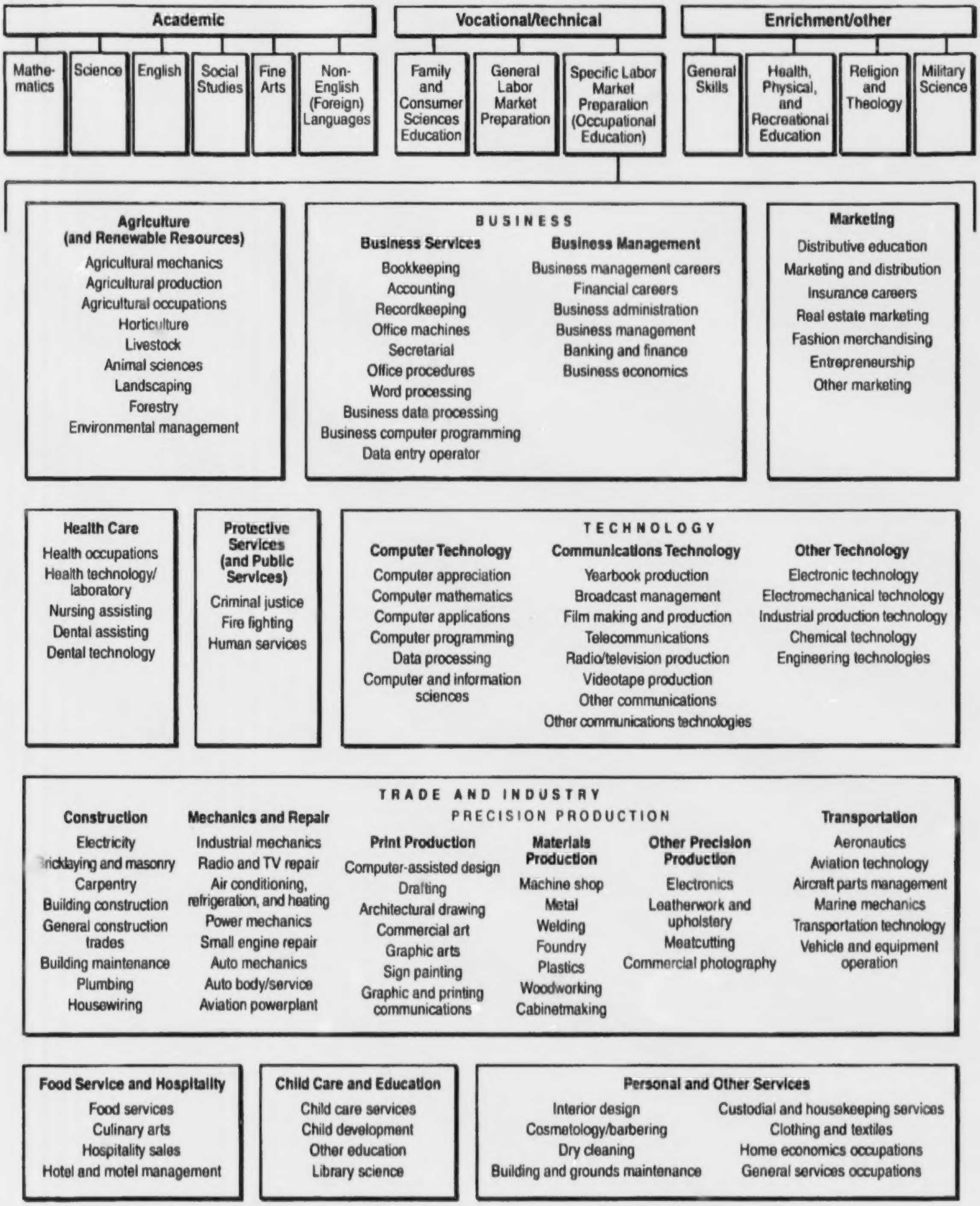
[1] These transcript studies were conducted as part of the High School and Beyond Longitudinal Study of 1980 Sophomores, "High School Transcript Study" (HS&B-So:80/82) regarding 1982 graduates; the National Education Longitudinal Study of 1988 (NELS:88/92), "Second Follow-up, Transcript Survey, 1992" regarding 1992 graduates; and the High School Transcript Studies (HSTS) of 1990, 1994, and 1998 regarding 1990, 1994, and 1998 graduates, respectively.

[2] The HS&B and NELS studies excluded students with the most severe disabilities, where it was determined by school staff that these students were unable to complete the lengthy student questionnaires that were a part of these studies. In order to ensure comparability across the data sets, graduates with special education diplomas were excluded from the HSTS samples (Gifford et al. 1989; Tuma 1996). Thus, the samples used for this trend analysis were consistent with the population of public high graduates, including students with disabilities, who earned regular or honors diplomas in each of the study years. This restriction is consistent with NCES reports on high school vocational/technical coursetaking published over the last decade and is consistent with NCES procedures for transcript studies (Alt and Bradby 1999). In addition, there may be some minor coding differences between NELS and the other transcript data that may affect the data for 1992. See appendix C for more information.

Figure 1.—Secondary School Taxonomy


Academic
Mathematics
Science
English
Social Studies
Fine Arts
Non-English (Foreign) Languages
Vocational/technical
Family and Consumer Sciences Education
General Labor Market Preparation
Specific Labor Market Preparation (Occupational Education)
Enrichment/other
General Skills
Health, Physical, and Recreational Education
Religion and Theology
Military Science
Agriculture (and Renewable Resources)
Agricultural mechanics
Agricultural production
Agricultural occupations
Horticulture
Livestock
Animal sciences
Landscaping
Forestry
Environmental management
BUSINESS
Business Services
Bookkeeping
Accounting
Recordkeeping
Office machines
Secretarial
Office procedures
Word processing
Business data processing
Business computer programming
Data entry operator
Business Management
Business management careers
Financial careers
Business administration
Business management
Banking and finance
Business economics
Marketing
Distributive education
Marketing and distribution
Insurance careers
Real estate marketing
Fashion merchandising
Entrepreneurship
Other marketing
Health Care
Health occupations
Health technology/laboratory
Nursing assisting
Dental assisting
Dental technology
Protective Services (and Public Services)
Criminal justice
Fire fighting
Human services
TECHNOLOGY
Computer Technology
Computer appreciation
Computer mathematics
Computer applications
Computer programming
Data processing
Computer and information sciences
Communications Technology
Yearbook production
Broadcast management
Film making and production
Telecommunications
Radio/television production
Videotape production
Other communications
Other communications technologies
Other Technology
Electronic technology
Electromechanical technology
Industrial production technology
Chemical technology
Engineering technologies
TRADE AND INDUSTRY
Construction
Electricity
ricklaying and masonry
Carpentry
Building construction
General construction trades
Building maintenance
Plumbing
Housewiring
Mechanics and Repair
Industrial mechanics
Radio and TV repair
Air conditioning, refrigeration, and heating
Power mechanics
Small engine repair
Auto mechanics
Auto body/service
Aviation powerplant
PRECISION PRODUCTION
Print Production
Computer-assisted design
Drafting
Architectural drawing
Commercial art
Graphic arts
Sign painting
Graphic and printing communications
Materials Production
Machine shop
Metal
Welding
Foundry
Plastics
Woodworking
Cabinetmaking
Other Precision Production
Electronics
Leatherwork and upholstery
Meatcutting
Commercial photography
Transportation
Aeronautics
Aviation technology
Aircraft parts management
Marine mechanics
Transportation technology
Vehicle and equipment operation
Food Service and Hospitality
Food services
Culinary arts
Hospitality sales
Hotel and motel management
Child Care and Education
Child care services
Child development
Other education
Library science
Personal and Other Services
Interior design
Cosmetology/barbering
Dry cleaning
Building and grounds maintenance
Custodial and housekeeping services
Clothing and textiles
Home economics occupations
General services occupations

SOURCE: Adapted from Bradby, D. and Hoachlander, E.G. (1999). *1998 Revision of the Secondary School Taxonomy* (NCES 1999–06). U.S. Department of Education. Washington, DC: National Center for Education Statistics Working Paper.

classification was applied to each of the five data surveys used in the analysis so that coursetaking was defined consistently over time.

In addition to the name of a course, the transcripts also provide the number of credits a student earned for each course. Credits have been standardized across the survey years, so that 1.0 credit is equivalent to completing a course that meets one period per day for an entire school year. This is equivalent to a standard Carnegie unit. However, for simplicity's sake, the report refers to credits rather than Carnegie units.

Terms Used in the Report

The Vocational/Technical Curriculum

High school vocational/technical education encompasses three different curricula: specific labor market preparation, or "occupational education"; general labor market preparation; and family and consumer sciences education (figure 1).[3] Occupational education consists of courses that teach skills and knowledge required in a particular occupation or set of related occupations. For example, health care programs may prepare students specifically for dental assisting or nursing assisting, or more broadly for general health occupations. Although, traditionally, the main purpose of occupational education was to prepare students for entering specific occupations, occupational education may also prepare students for entering a related vocational/technical program in college. Based on SST classifications, occupational education in this report consists of the 10 broad and 18 narrow program areas shown in figure 1.

General labor market preparation consists of courses that teach general employment skills that are not specific to one occupational area, such as basic typewriting/keyboarding, introductory technology education, and career preparation and general work experience courses. Family and consumer sciences education consists of courses intended to prepare students for family and consumer roles outside the paid labor market.[4]

For purposes of this report, trends focus on vocational/technical coursetaking overall and on occupational coursetaking. Among 1998 public high school graduates, 96.5 percent earned at least some credits in vocational/technical education in high school (table 1). In addition, 90.7 percent of 1998 graduates earned some credits in occupational education (table 2).

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[3] For simplicity's sake, this report uses the term ***occupational education*** in place of ***specific labor market preparation***.

[4] Home economics-related courses that prepare students for the paid labor market are included under occupational education, in the child care and education, food service and hospitality, and personal and other services program areas.

Although vocational/technical coursetaking is prevalent in high schools, students take varying amounts and types of these courses and take them for different purposes. It is therefore important to examine a range of measures when analyzing participation. The measures examined in this report follow in ascending order of restrictiveness. There is considerable overlap among the measures, as indicated below.

- Graduates earning greater than 0.0 credits in vocational/technical education. All of the following groups of students are subsets of this group.
- Graduates earning greater than 0.0 credits in occupational education. This measure is a subset of the previous measure.
- Graduates earning 3.0 or more credits in vocational/technical education. All of the following groups of students are subsets of this group.
- Graduates earning 3.0 or more credits in occupational education, regardless of whether they concentrate their occupational coursetaking in a single program area. This measure is a subset of the previous measure.
- Graduates earning 3.0 or more credits in one of the 10 broad occupational program areas in figure 1. These students are referred to in this report as *occupational concentrators*.[5] This measure is a subset of the previous measure. In some cases, the report also examines trends in concentrating (earning 3.0 or more credits) in the 18 narrow occupational program areas in figure 1.
- Graduates earning 3.0 or more credits in one or more of the 10 broad occupational program areas in figure 1, with at least 1.0 credit in second- or higher-level courses or cooperative education courses.[6] These students are referred to in this report as *advanced occupational concentrators*; they are included in tables but are not discussed in the text.

In addition to tracking the percentages of public high school graduates satisfying the participation measures mentioned above, the report also examines the average number of credits earned by graduates in vocational/technical and occupational education. Although all of the above measures are discussed in this report or referred to in the tables, the report emphasizes the coursetaking patterns of occupational concentrators because this group is a common focus of federal and state accountability and research efforts for vocational/technical education (U.S. Department of Education 2002; Silverberg et al. 2002).[7]

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[5] This classification was also used in Levesque et al. (2000), in which students were referred to as "vocational" concentrators. In the few cases where students earned 3.0 or more credits in more than one of the 10 program areas, they were assigned to the program area in which they earned the most credits.

[6] The SST divides the occupational courses in each program area into four categories: first-level, second- or higher-level, cooperative education, and specialty courses. The first three categories generally represent sequential coursetaking.

Classification of Computer-Related Courses

As part of its stated purpose, the 1998 Perkins Act promotes developing the technical skills of students in vocational/technical programs. While students develop technical skills—and use various technologies—throughout the vocational/technical curriculum, it is not usually possible to determine from transcript records the specific kinds of technical skills developed or technology and equipment used in a particular course. However, as one measure of exposure to technical skills, this report examines participation in courses whose *primary objective* is to teach students computer-related skills and knowledge, referred to here as computer-related courses.

The NCES standard procedures for transcript studies currently include all computer-related courses (including those taught in mathematics and computer science departments) under the vocational/technical curriculum (Alt and Bradby 1999). Although some of these courses are included in general labor market preparation (under typewriting/keyboarding and under technology education), most computer-related courses are included in occupational education. Most of these courses are included under the business services and computer technology program areas, while some are included under the agriculture, business management, and drafting/graphics program areas. Figure 2 summarizes the classification of all computer-related courses in the SST. Only a subset of courses in technology education, agriculture, business management, business services, and drafting/graphics areas were classified as computer related.[8] In contrast, virtually all courses in typewriting/keyboarding and computer technology were so classified.

There was one main exception to this classification scheme. According to recommendations made by experts during the revision of the SST, all typewriting/keyboarding courses in 1982 were assumed *not* to be computer related (Alt and Bradby 1999). In contrast, in 1990 and subsequent years, all of these courses were classified as computer related because it is not usually possible to determine from transcript records what kind of equipment—whether a standard electric typewriter, an electric typewriter with computerized memory, or a computer—was used in a typewriting/keyboarding course. This decision may have resulted in an undercount of computer-related coursetaking in 1982 and an overcount in the 1990s, particularly in the early 1990s. The

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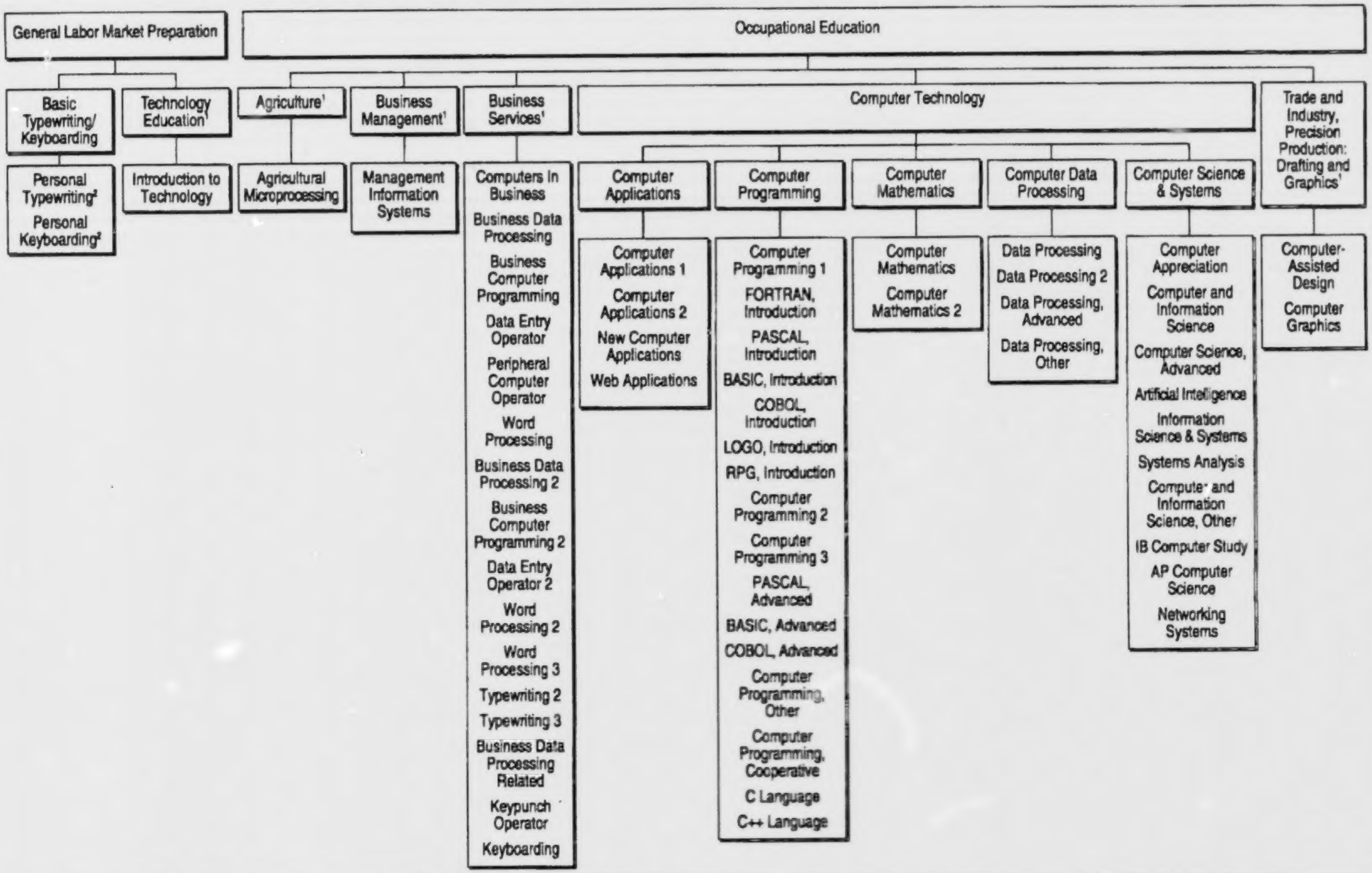
[7] The U.S. Department of Education (2002) and Silverberg (2002) refer to this group as "vocational" concentrators.

[8] In all years studied, there was no detectable computer-related coursetaking in agriculture and business management. Therefore, these program areas were dropped from the analysis of computer-related coursetaking.

Figure 2.—Classification of computer-related courses in the Secondary School Taxonomy


General Labor Market Preparation
Occupational Education
Basic Typewriting/ Keyboarding
Technology Education[1]
Agriculture[1]
Business Management[1]
Business Services[1]
Computer Technology
Trade and Industry, Precision Production: Drafting and Graphics[1]
Personal Typewriting[2]
Personal Keyboarding[2]
Introduction to Technology
Agricultural Microprocessing
Management Information Systems
Computers In Business
Business Data Processing
Business Computer Programming
Data Entry Operator
Peripheral Computer Operator
Word Processing
Business Data Processing 2
Business Computer Programming 2
Data Entry Operator 2
Word Processing 2
Word Processing 3
Typewriting 2
Typewriting 3
Business Data Processing Related
Keypunch Operator
Keyboarding
Computer Applications
Computer Programming
Computer Mathematics
Computer Data Processing
Computer Science & Systems
Computer Applications 1
Computer Applications 2
New Computer Applications
Web Applications
Computer Programming 1
FORTRAN, Introduction
PASCAL, Introduction
BASIC, Introduction
COBOL, Introduction
LOGO, Introduction
RPG, Introduction
Computer Programming 2
Computer Programming 3
PASCAL, Advanced
BASIC, Advanced
COBOL, Advanced
Computer Programming, Other
Computer Programming, Cooperative
C Language
C++ Language
Computer Mathematics
Computer Mathematics 2
Data Processing
Data Processing 2
Data Processing, Advanced
Data Processing, Other
Computer Appreciation
Computer and Information Science
Computer Science, Advanced
Artificial Intelligence
Information Science & Systems
Systems Analysis
Computer and Information Science, Other
IB Computer Study
AP Computer Science
Networking Systems
Computer-Assisted Design
Computer Graphics

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[1] Only a subset of courses in these areas were considered computer related.

[2] According to expert recommendation, these courses were not counted as computer related in 1982. In contrast, they were assumed to be computer related in 1990 and subsequent years.

SOURCE: Adapted from Bradby, D. and Hoachlander, E.G. (1999). *1998 Revision of the Secondary School Taxonomy* (NCES 1999–06). U.S. Department of Education. Washington, DC: National Center for Education Statistics Working Paper.

magnitude of these potential miscounts is not known. Because it is difficult to determine the computer-related nature of typewriting/keyboarding courses and because the level of computer-related coursetaking overall was very low in 1982, this report focuses on trends in computer-related coursetaking for the years 1990 to 1998. See Levesque (2003) for a more detailed description of the computer-related course classification used in this report.

Key Population Variables

This report uses the following variables and categories to provide information on as many of the above-identified special and protected populations as possible, as well as on their peers who were not members of these groups. Measures were selected based on federal definitions, previous related research, and data availability. Data were analyzed only for those years and surveys that contained comparable variables. For the sake of readability when summarizing findings, the report uses the terms *disadvantaged* and *advantaged* to describe student groups on some of the key variables, as indicated below.[9] Appendix C provides additional information on how these variables were constructed.

> *Race/ethnicity*. Includes the five categories of American Indian/Alaska Native;[10] Asian/Pacific Islander; Hispanic; non-Hispanic Black; and non-Hispanic White. For simplicity's sake, the text refers to Black and White graduates, although students in both of these groups were also non-Hispanic.
>
> *Sex*. Includes the two categories of male and female.
>
> *Disability status (grade 12)*. Includes students who were reported to have a disability and students who were reported to have no disability as of grade 12. It should be remembered, however, that graduates with the most severe disabilities were excluded from the analysis due to survey constraints. Consequently, the disability status variable identifies students with and without disabilities among the population of public high school graduates who earned regular or honors diplomas.[11] For purposes of this analysis, students with disabilities were considered to be "disadvantaged," while students without disabilities were considered to be more "advantaged."

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[9] In a few cases, *advantaged* students were further classified as *moderately advantaged* and *highly advantaged*. The race/ethnicity and sex categories were not classified according to advantage, because the Perkins legislation did not make this distinction for these variables.

[10] Small sample sizes for American Indian/Alaska Native graduates (between 84 and 200 students versus 300 or more students in other racial/ethnic groups in each of the five years studied) resulted in relatively large standard errors and relatively unreliable estimates for this group. As a result, many large apparent differences between American Indian/Alaska Native graduates and other racial/ethnic groups were not statistically significant.

[11] As of 1998, about 31 percent of students with disabilities held special education diplomas and were excluded from the study.

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English proficiency (grade 12). Includes the two categories of limited English proficiency and English proficient. It is important to note that this variable describes students' English language proficiency as of grade 12. For purposes of this analysis, graduates who had limited English proficiency in grade 12 were considered to be "disadvantaged," while graduates who were English proficient in grade 12 were considered to be more "advantaged."

The report uses the following three measures of academic achievement. The final federal regulations to the 1990 Perkins Act used grade-point average to define academically disadvantaged individuals.[12] The other two measures were suggested by previous research on whether vocational education has been a "dumping ground" for low academically achieving students (Boesel et al. 1994).

Grade-point average (GPA). Calculated from grades recorded in the transcript files, this variable has a possible range of 0.0 to 4.0. It was not possible in some of the surveys to calculate GPA for academic courses only (a preferable measure of academic achievement), so overall GPA was used. GPA was collapsed into the three categories: high GPA (greater than 3.5); mid-level GPA (2.0 to 3.5); and low GPA (less than 2.0). For purposes of this analysis, students with a GPA of less than 2.0 were considered to be "disadvantaged"; students with a GPA of 2.0 to 3.5 were considered to be "moderately advantaged"; and students with a GPA of greater than 3.5 were considered to be "highly advantaged."

Academic coursework completed. This variable describes whether students completed all low or all high mathematics, science, and English courses, or some other combination of mathematics, science, and English courses (mid-level or mixed academic coursetaking). Low and high mathematics, science, and English courses are defined in the glossary (appendix B) and technical appendix (appendix C). For purposes of this analysis, students completing all low-level academic coursework were considered to be "disadvantaged"; students completing all high-level academic coursework were considered to be "highly advantaged"; and students completing some other combination of academic coursework were considered to be "moderately advantaged."

Grade 9 mathematics. This variable identifies the mathematics course a student took in grade 9. It includes the three categories of high-level grade 9 mathematics (geometry or higher), mid-level grade 9 mathematics (pre-algebra or algebra 1), and low-level mathematics (no mathematics or mathematics courses below algebra 1). It provides a measure of academic achievement before most of graduates' coursework in vocational/technical education was taken[13] and is therefore less confounded than either GPA or academic coursework completed with that coursetaking. For purposes of this analysis, students who took low-level mathematics in grade 9 were considered to be "disadvantaged"; students who took mid-level grade 9 mathematics were considered to be "moderately advantaged"; and students who took high-level grade 9 mathematics were considered to be "highly advantaged."

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[12] The 1998 Perkins Act offered no additional guidance for identifying students with barriers to educational achievement, other than limited English proficiency.

Although a student-level measure of socioeconomic status would have been preferable for this analysis, such a variable was not available from the 1990, 1994, and 1998 High School Transcript Studies (HSTS). Instead, the report uses the following two school-level variables as measures of economic status.[14]

School urbanicity. This variable describes the location of the school a graduate attended in the 12th grade and includes the three categories of urban, suburban, and rural. These categories are defined further in the glossary (appendix B) and technical appendix (appendix C).

School poverty level. This variable describes the proportion of students in the school a graduate attended in the 12th grade who participated in the National School Lunch Program (NSLP). It includes the categories of high poverty (greater than 50 percent in NSLP) and low poverty (5 percent or less in NSLP), with a middle group having greater than 5 to 50 percent of students in NSLP. This variable also includes a category for students whose schools did not report their participation in NSLP.[15] For purposes of this analysis, students in high-poverty schools were considered to be "disadvantaged," while students in low-poverty schools were considered to be "highly advantaged." The middle group was considered to be of mixed advantage. Students who did not have school-reported NSLP information were not classified according to advantage on this variable. The variable is defined further in the glossary (appendix B) and technical appendix (appendix C).

It should be remembered that there may be a fairly high correspondence among some of these variables, for example, between school poverty level and grade 9 mathematics taken. This report did not attempt to isolate the unique contribution of each factor to participation in vocational/technical education. Rather, the report describes bivariate relationships according to NCES standards for this type of analysis. See appendix C for additional information on technical procedures followed in the report.

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[13] The 1998 public high school graduates earned about 21 percent of their total vocational/technical credits and 16 percent of their total occupational credits in grade 9.

[14] Section 421 of the 1990 Perkins Act included information on students in rural and urban areas in its identification of economically disadvantaged students. The final regulations to the 1990 Perkins Act also included eligibility for the National School Lunch Program in the definition of this group. The 1998 Perkins Act provided no additional guidance on defining economically disadvantaged students.

[15] A substantial proportion (14 to 17 percent) of students did not have school-reported information on their school's participation in the NSLP. Consequently, a "not reported" category was included for this variable.

Overall Trends

Patterns and trends in who participates in vocational/technical education must be examined in the context of general trends in vocational/technical coursetaking. This section summarizes key trends that were detailed in Levesque (2003). During the period examined in this report, students changed both the amount and nature of their high school coursetaking. In particular, between 1982 and 1998, public high school graduates increased their total and their academic coursetaking while they decreased their vocational/technical coursetaking, although most declines occurred by the early 1990s. The primary change in vocational/technical coursetaking was not in the proportion of high school students participating in vocational/technical education but in the amount of vocational/technical education they took. That is, the breadth of vocational/technical coursetaking declined slightly, while the depth of this coursetaking declined more steeply. In contrast to vocational/technical coursetaking overall, occupational coursetaking was relatively steady, with the average number of occupational credits that 1998 graduates earned in high school not statistically different from the average number earned by 1982 graduates. Consequently, occupational coursetaking became a more prominent part of vocational/technical coursetaking over the period studied. However, graduates were less likely to concentrate in occupational education (earn 3.0 or more credits in one of the 10 broad occupational program areas in figure 1) over this period. Many of these coursetaking changes coincided with changes in education policies emphasizing academic achievement (National Commission on Excellence in Education 1983; the 1990 and 1998 Perkins Acts; and the School-to-Work Opportunities Act of 1994) and in the labor market demand for specific occupations (Levesque et al. 2000; Hurst and Hudson 2000).

II. Selected Findings

Patterns of Vocational/Technical Coursetaking in 1998

This section of the report summarizes the vocational/technical and occupational coursetaking of the 1998 public high school graduates. Although most of these graduates took at least some vocational/technical and occupational coursework, graduates who were members of disadvantaged groups generally took more such coursework and were more likely to concentrate in occupational education than their counterparts who were members of more advantaged groups. However, the majority of occupational concentrators came from moderately advantaged groups, rather than from disadvantaged or highly advantaged groups.

Overall Vocational/Technical Coursetaking Among 1998 Graduates

- Although there were some differences among student groups who were members of the class of 1998 in the extent of their vocational/technical coursetaking, more than 90 percent of each identified student group took some vocational/technical coursework in high school, regardless of their special or protected population status (table 1).[16]
- The 1998 graduates earned more than 2.6 vocational/technical credits on average—equivalent to taking more than two and a half full-year vocational/technical courses, regardless of their special or protected population status (table 3).[17]
- Generally, disadvantaged students were more likely to earn 3.0 or more vocational/technical credits in high school than more advantaged students (table 11), and they earned a larger number of vocational/technical credits on average than their more advantaged peers (table 3). These differences in the depth of vocational/technical coursetaking were apparent with regard to disability status in grade 12, GPA, academic coursework completed, grade 9 mathematics, and school poverty.[18] For example, 83.0

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[16] The 92.2 percent of 1998 graduates who completed all high-level academic coursework in high school was not statistically different from 90.0 percent.

[17] The 2.82 vocational/technical credits that 1998 graduates with a high GPA (greater than 3.5) was not statistically different from 2.6 credits.

[18] Students in high- and middle-poverty schools both earned more vocational/technical credits on average than students in low-poverty schools, but the difference between the average number of vocational/technical credits earned by students in high- and middle-poverty schools was not statistically significant (table 3).

percent of 1998 public high school graduates with disabilities in grade 12 versus 60.9 percent of 1998 graduates without such disabilities earned 3.0 or more vocational/technical credits in high school, a difference of about 22 percentage points (table 11). Similarly, graduates with disabilities in grade 12 earned about one and a half times the average number of vocational/technical credits that graduates without such disabilities earned (5.85 credits versus 3.94 credits) (table 3).

- The only disadvantaged student group that did not take significantly more vocational/technical coursework than their more advantaged peers were graduates who had limited English proficiency in grade 12. No significant difference was detected between graduates who had limited English proficiency in grade 12 and their English proficient peers in the likelihood of earning 3.0 or more vocational/technical credits in high school (52.2 percent versus 61.6 percent) (table 11). In addition, graduates who had limited English proficiency in grade 12 earned fewer vocational/technical credits on average than their English proficient peers (3.19 credits versus 4.00 credits) (table 3).
- Among 1998 graduates, males took more vocational/technical courses than females, and students in rural schools took more vocational/technical courses than students in either urban or suburban schools (tables 3 and 11). In contrast, Asians/Pacific Islanders were less likely than Black graduates to earn 3.0 or more vocational/technical credits (table 11), and they earned fewer vocational/technical credits on average than graduates in any other racial/ethnic group (table 3). No other differences among racial/ethnic groups in tables 3 and 11 were statistically significant.

Occupational Coursetaking Among 1998 Graduates

Most 1998 public high school graduates (90.7 percent) earned at least some credits in occupational education in high school (table 2). The occupational coursetaking patterns of the various student groups examined in this report were similar to the vocational/technical coursetaking patterns described above.

- Although there were some differences among student groups who were members of the class of 1998, more than 80 percent of each identified student group took some occupational coursework, regardless of their special or protected population status (table 2).[19]

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[19] The 83.3 percent of 1998 graduates who completed all high-level academic coursework in high school was not statistically different from 80.0 percent.

- The 1998 graduates earned at least 2.0 occupational credits on average—equivalent to taking two or more full-year occupational courses, regardless of their special or protected population status (table 4).[20]
- As with vocational/technical coursetaking, disadvantaged students were generally more likely to earn 3.0 or more occupational credits in high school than more advantaged students (table 12), and they earned more occupational credits on average than their more advantaged peers (table 4). These differences in the depth of occupational coursetaking were apparent with regard to disability status in grade 12, GPA, academic coursework completed, grade 9 mathematics,[21] and school poverty. For example, public high school graduates in high-poverty schools (as well as those in middle-poverty schools) were more likely to earn 3.0 or more occupational credits than graduates in low-poverty schools (53.9 percent and 45.8 percent, respectively, versus 30.0 percent) (table 12), and they earned more occupational credits on average than their peers in low-poverty schools (3.30 credits and 2.97 credits, respectively, versus 2.22 credits) (table 4).[22]
- The only disadvantaged student group that did not take more occupational coursework than their more advantaged peers were graduates who had limited English proficiency in grade 12. These graduates were less likely than their English proficient peers to earn 3.0 or more occupational credits (27.2 percent versus 44.0 percent) (table 12), and they earned fewer occupational credits on average (1.99 credits versus 2.88 credits) (table 4).
- Among 1998 graduates, males took more occupational courses than females, and students in rural schools took more occupational courses than students in either urban or suburban schools (tables 12 and 4). Asians/Pacific Islanders were less likely than graduates in most other racial/ethnic groups to earn 3.0 or more occupational credits[23] (table 12), and they earned fewer occupational credits on average than graduates in any other racial/ethnic group (table 4).

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[20] The 1.99 occupational credits earned by 1998 graduates who had limited English proficiency in grade 12, the 2.02 occupational credits earned by 1998 graduates with a high GPA (greater than 3.5), and the 2.22 occupational credits earned by 1998 graduates in low-poverty schools were not statistically different from 2.00 credits.

[21] Graduates who took low-level mathematics in grade 9 were more likely to earn 3.0 or more occupational credits than graduates who took high-level grade 9 mathematics, and they earned more occupational credits on average than their high-achieving peers in grade 9. However, the difference between graduates who took mid-level grade 9 mathematics and their lower achieving peers in grade 9 was not statistically significant.

[22] Differences between graduates in high- and middle-poverty schools were not statistically significant.

[23] The one exception was that the difference between Asians/Pacific Islanders and American Indians/Alaska Natives in the percentage of graduates earning 3.0 or more occupational credits was not statistically significant.

1998 Graduates and Concentrating in Occupational Education

One-quarter (25.0 percent) of all 1998 public high school graduates concentrated in occupational education (earned 3.0 or more credits in one of the 10 broad occupational program areas in figure 1) (table 13). In general, patterns of concentrating in occupational education were similar to the occupational coursetaking patterns noted above.

- Disadvantaged students who were members of the 1998 graduating class were generally more likely to concentrate in occupational education than more advantaged students (table 13). These differences were apparent with regard to disability status in grade 12, GPA, academic coursework completed, grade 9 mathematics, and school poverty.[24] The only disadvantaged student group that was not more likely to concentrate in occupational education than their more advantaged peers were graduates who had limited English proficiency in grade 12. These graduates were less likely than their English proficient peers to complete an occupational concentration (8.7 percent versus 25.1 percent).
- Among 1998 graduates, males were more likely to concentrate in occupational education than females, and students in rural schools were more likely than students in urban and suburban schools to do so (table 13). In contrast, Asians/Pacific Islanders were less likely than Black or White graduates to complete an occupational concentration.

However, patterns varied somewhat by specific occupational program area. For example, while academically disadvantaged graduates were more likely than their more advantaged peers to concentrate in occupational education generally, this pattern was sometimes reversed in certain occupational program areas, notably communications technology. Specific exceptions to overall patterns for the class of 1998 include the following:

- The 1998 public high school graduates with a mid-range GPA (2.0 to 3.5) were more likely than graduates with a low GPA (less than 2.0) to concentrate in agriculture (2.7 percent versus 1.1 percent) (table 16). In addition, graduates with a high GPA (greater than 3.5) were more likely than graduates with a low GPA to concentrate in the broad technology program area (table 31), and these graduates with a high GPA were more likely than graduates with a mid-range GPA to concentrate in communications technology (table 33).[25]

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[24] Graduates who took low-level mathematics in grade 9 were more likely to concentrate in occupational education than graduates who took high-level mathematics in grade 9. However, the difference between graduates who took mid-level mathematics in grade 9 and their lower achieving peers was not statistically significant. Graduates in high-poverty schools (as well as those in middle-poverty schools) were more likely than graduates in low-poverty schools to concentrate in occupational education. However, differences between graduates in high- and middle-poverty schools were not statistically significant.

- The 1998 graduates who completed all high-level academic coursework in high school were more likely than their peers who completed mid-level or mixed academic coursework to concentrate in communications technology (table 33).[26] Similarly, graduates who took high-level mathematics courses in grade 9 were more likely than their peers who took low-level mathematics in this grade to concentrate in this occupational program area (table 33).
- Those 1998 graduates who were in high-poverty schools (with greater than 50 percent of students participating in NSLP) were less likely than their peers in middle-poverty schools (with 5 to 50 percent of students in NSLP) to concentrate in food service and hospitality programs (table 35).
- Those 1998 graduates who were in rural schools were less likely than their peers in urban schools to concentrate in marketing (table 20).
- While male graduates from the class of 1998 were more likely than their female peers to concentrate in occupational education generally, males were less likely than females to concentrate specifically in business services (table 18), health care (table 21), child care and education (table 36), and personal and other services (table 37).
- Black graduates who were members of the class of 1998 were less likely than their White peers to concentrate in agriculture (table 16), in the broad trade and industry program area (table 23), and particularly in materials production (table 28).[27] American Indian/Alaska Native graduates were less likely than Black graduates to concentrate in business services (table 18). In addition, Hispanic graduates were less likely than Black graduates to concentrate in the construction trades (table 24).

Characteristics of Occupational Concentrators From the Class of 1998

While disadvantaged students who were members of the class of 1998 were more likely than their more advantaged peers to participate in vocational/technical education in general, and to concentrate in occupational education in particular, these disadvantaged students represented a minority of all occupational concentrators. In fact, when students were classified into three groups (low-, moderate- or middle-, and high-advantage), the majority of occupational concentrators (about 60 percent or more) came from the middle groups. In each case, either occupational concentrators were more likely to be from these middle groups than was the 1998 public high school class as a whole, or no significant difference was detected in the proportion of occupational concentrators and all graduates who were from these groups. This section compares the percentage distributions for all graduates (table 38) and for occupational concentrators (table 39) as of 1998.

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[25] There were too few 1998 graduates with a low GPA who concentrated in communications technology to produce a reliable estimate for this group.

[26] There were too few 1998 graduates completing all low-level academic coursework who concentrated in communications technology to produce a reliable estimate for this group.

[27] Black graduates were also less likely than Hispanic graduates to concentrate in materials production programs.

- Disadvantaged students represented a minority of all occupational concentrators. About 5 percent or less of occupational concentrators who were members of the class of 1998 were disabled in grade 12, had limited English proficiency in grade 12, or completed all low-level academic coursework in high school (table 39). In addition, about 10 percent of occupational concentrators had a low GPA (less than 2.0) or attended high-poverty schools, and about 20 percent of occupational concentrators took low-level mathematics courses in grade 9.
- Although disadvantaged students were a minority of all occupational concentrators, a larger proportion of occupational concentrators than the 1998 graduating class as a whole were disabled in grade 12 (4.2 percent versus 2.8 percent) (tables 39 and 38, respectively). However, the proportion of occupational concentrators who had limited English proficiency in grade 12 was lower than that for all 1998 graduates (0.2 percent versus 0.7 percent).
- On measures that classified students into three groups (low-, moderate- or middle-, and high-advantage), most occupational concentrators (about 60 percent or more) were from the middle groups (table 39). In each case, the proportion of occupational concentrators who were from these middle groups was either greater than or not statistically different from the corresponding proportions for the 1998 class as a whole. Specifically, 79.5 percent of occupational concentrators versus 75.5 percent of all 1998 graduates had mid-level GPAs (2.0 to 3.5) and 87.8 percent of occupational concentrators versus 82.8 percent of all graduates completed mid-level or mixed academic coursework in high school (tables 39 and 38, respectively). The percentages of occupational concentrators who took mid-level mathematics courses in grade 9 or who attended middle-poverty schools were not statistically different from the corresponding percentages of all graduates who were from these groups.
- In comparison to the 1998 graduating class as a whole, occupational concentrators were less likely to be from the highest academic achievement groups. Specifically, occupational concentrators were less likely than all graduates to have a high GPA (10.5 percent versus 17.4 percent), to complete all high-level academic coursework (8.5 per-

cent versus 14.9 percent), or to take high-level mathematics courses in grade 9 (14.3 percent versus 20.4 percent) (tables 39 and 38, respectively). However no significant difference was detected in the percentage of occupational concentrators and all graduates who attended low-poverty schools.

- In addition, no significant difference was detected in the proportion of occupational concentrators and all graduates who were from low-advantaged groups on measures that classified students into three groups (including GPA, academic coursework completed in high school, grade 9 mathematics, and school poverty level) (tables 39 and 38, respectively).
- A higher percentage of occupational concentrators who were members of the class of 1998 completed all high-level academic coursework than completed all low-level academic coursework in high school (8.5 percent versus 3.7 percent) (table 39). On the other hand, no significant differences were detected in the percentages of occupational concentrators who were in the most advantaged and most disadvantaged categories with regard to GPA (10.5 percent versus 10.0 percent) and school poverty (10.2 percent versus 10.7 percent). With regard to grade 9 mathematics, the percentage of occupational concentrators in the lowest achievement group was greater than the percentage in the highest achievement group (20.2 percent versus 14.3 percent) (table 39).[28]
- The majority of occupational concentrators were White and were male (table 39). In fact, occupational concentrators were more likely to be male than the 1998 graduating class as a whole (58.6 percent versus 47.8 percent) (tables 39 and 38, respectively).[29] With regard to school urbanicity, no school type enrolled a majority of occupational concentrators (table 39). However, occupational concentrators were more likely to attend rural schools than urban schools (40.1 percent versus 26.2 percent).[30] No significant difference was detected between occupational concentrators and all 1998 graduates based on school urbanicity (tables 39 and 38, respectively).

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[28] As explained in the Introduction, grade 9 mathematics is a better measure of prior academic achievement than either GPA or academic coursework completed, which measure cumulative high school achievement.

[29] No significant difference was detected in the percentage of occupational concentrators and all graduates who were White.

[30] No significant differences were detected in the percentage of occupational concentrators who attended suburban schools and those who attended schools in other locales.

Trends in Vocational/Technical Coursetaking: 1982 to 1998[31]

Trends in Overall Vocational/Technical Coursetaking

Between 1982 and 1998, the primary change in vocational/technical coursetaking was in the amount of vocational/technical education that students took rather than in the proportion of students participating in vocational/technical education. The average number of credits graduates earned in vocational/technical education declined from 1982 to 1990, after which no significant changes were detected. However, during the 1990s, vocational/technical credits continued to represent a declining share of the total high school credits that graduates earned. This relative decline was due to the fact that public high school graduates earned on average more academic credits and—to a lesser extent—more enrichment/other credits over this decade (Levesque 2003). Nonetheless, vocational/technical coursetaking remained a substantial part of each student group's coursetaking. Some exceptions to these overall trends are listed below.

- Almost all public high school graduates (more than 90 percent) took some vocational/technical coursework in high school, regardless of their special or protected population status (table 1). This was true for each graduating class studied between 1982 and 1998.[32]
- Between 1982 and 1998, each identified student group earned more than 2.0 vocational/technical credits on average—equivalent to more than two full-year vocational/technical courses (table 3).[33] This level of coursetaking exceeded most state graduation requirements for vocational/technical education over the same period.[34] In addition, more than 25 percent of each identified student group earned 3.0 or more vocational/technical credits over the period studied (table 11).[35]
- The average number of credits that public high school graduates earned in vocational/technical education decreased from 4.68 credits for 1982 graduates to 4.19 credits for 1990 graduates, after which the number of vocational/technical credits graduates

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[31] Because data for 1982 were not available, trends between 1982 and 1998 could not be determined with regard to English proficiency in grade 12 and school poverty.

[32] The 91.7 percent of 1994 graduates who completed all high-level academic coursework in high school and the 92.2 percent of 1998 graduates who completed such coursework were not statistically different from 90 percent. In addition, the difference between the 100 percent of 1982 graduates who completed all low-level academic coursework in high school and 90 percent could not be tested, because the corresponding 1982 standard error was 0.00.

[33] The 2.14 vocational/technical credits earned by 1994 graduates who completed all high-level academic coursework in high school were not statistically different from 2.0 credits.

[34] In 1998, five states required 2.0 or more credits of vocational/technical education for students to graduate, including computer education requirements. This number of states was smaller in earlier years. See Education Commission of the States (1990) and Snyder and Hoffman (2001), table 154.

[35] The 29.5 percent of 1990 graduates who completed all high-level academic coursework in high school was not statistically different from 25.0 percent.

earned was about 4.00 credits on average (table 3). However, trends varied among the different student groups. Some exceptions to the overall trend included students who were disabled in grade 12 (who increased the number of vocational/technical credits they earned between 1982 and 1998);[36] and there was no significant difference between 1982 and 1998 in the average number of vocational/technical credits earned by Asians/Pacific Islanders, Blacks, and students in rural schools (table 3).

- In addition, while some moderate academic achievers (including graduates with a GPA of 2.0 to 3.5 and graduates who completed mid-level or mixed academic coursework in high school) earned fewer vocational/technical credits over the period studied, the vocational/technical coursetaking of both their higher and lower achieving peers did not change significantly between 1982 and 1998 (table 3). In comparison, low-level mathematics coursetakers in grade 9 earned fewer vocational/technical credits between 1982 and 1998, while there was no significant difference over the same period in the numbers of vocational/technical credits earned by graduates who took high- and mid-level mathematics in grade 9.

One question of interest to policymakers is whether vocational/technical coursetaking declines occurred across the board or only among certain subgroups of students. Most often, vocational/technical coursetaking declines occurred among groups earning numbers of vocational/technical credits that were not statistically different from the average for all 1982 graduates.[37] In comparison, there were few significant changes detected in the average number of vocational/technical credits earned by several groups that earned *above*-average numbers of vocational/technical credits in 1982.[38] At the same time, there were no significant changes detected between 1982 and 1998 in the average number of vocational/technical credits earned by several groups that earned *below*-average numbers of vocational/technical credits in 1982 compared with all 1982 graduates.[39]

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[36] Most of this increase occurred between 1982 and 1990, after which there were no significant changes in the numbers of vocational/technical credits earned by disabled students.

[37] Groups that earned numbers of vocational/technical credits that were not statistically different from the average for all 1982 graduates and who exhibited declines in these credits as of 1998 included American Indians/Alaska Natives and Whites; both males and females; students with no reported disabilities in grade 12; students earning mid-level GPAs; students completing mid-level or mixed academic coursework in high school; and students attending urban or suburban schools. Exceptions to this pattern included Blacks and students taking mid-level mathematics in grade 9 (both who earned numbers of vocational/technical credits as of 1998 that were not statistically different from those earned by their 1982 peers who were members of these groups), as well as students with disabilities in grade 12 (who earned a larger number of vocational/technical credits as of 1998 in comparison with their 1982 peers).

[38] Groups that earned above-average numbers of vocational/technical credits in 1982 and that did not exhibit significant declines as of 1998 included students earning low GPAs; students completing all low-level academic coursework in high school; and students attending rural schools. Exceptions to this pattern included Hispanics and students taking low-level mathematics in grade 9, both who earned a smaller number of vocational/technical credits as of 1998 in comparison with their 1982 peers.

As a consequence of these changes, there were few shifts among subgroups of graduates with regard to their relative vocational/technical coursetaking patterns over the period studied. That is, most groups that earned above-average numbers of vocational/technical credits in 1982 still earned above-average numbers of such credits as of 1998 (including low academic achievers and students attending rural schools). In addition, all groups that earned below-average numbers of vocational/technical credits in 1982 still earned below-average numbers of such credits as of 1998 (including Asians/Pacific Islanders and high academic achievers). Finally, despite the coursetaking declines noted above, most groups that earned numbers of vocational/technical credits in 1982 that were not statistically different from the average for all 1982 graduates were also in this middle coursetaking group as of 1998.

However, there were two exceptions to this overall pattern. Hispanic graduates, who earned *above*-average numbers of vocational/technical credits in 1982 compared with all 1982 graduates and who earned fewer such credits over the period studied, earned numbers of vocational/technical credits as of 1998 that were not statistically different from the average for all 1998 graduates. In comparison, students with disabilities as of grade 12 (who earned numbers of vocational/technical credits in 1982 that were not statistically different from the average for all 1982 graduates and who earned more such credits over the period studied) earned *above*-average numbers of vocational/technical credits as of 1998 compared with all 1998 graduates.

- The share of total high school credits earned by graduates that were vocational/technical credits declined from 21.8 percent for 1982 graduates to 15.9 percent for 1998 graduates (table 5). This trend was evident for most graduates regardless of their special or protected population status. Exceptions included Asians/Pacific Islanders, students who were disabled in grade 12, and graduates who completed all low- or all high-level academic coursework in high school. There were no significant changes between 1982 and 1998 in the share of total high school credits earned by these latter groups in the vocational/technical curriculum.

Trends in Occupational Coursetaking Overall

As with vocational/technical education overall, there were no significant changes in the breadth of occupational coursetaking, with most public high school graduates earning at least some occupational credits over the period studied. In addition, the average number of occupational credits that 1998 graduates earned in high school was not statistically different from the average number earned by 1982 graduates. Nonetheless, occupational coursetaking increased on average as a proportion of graduates' total vocational/technical coursetaking over the period. Some exceptions to these overall trends are listed below.

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[39] Groups that earned below-average numbers of vocational/technical credits in 1982 compared with all 1982 graduates and that did not exhibit significant declines as of 1998 included Asians/Pacific Islanders; students earning high GPAs; students completing all high-level academic coursework in high school; and students taking high-level grade 9 mathematics courses.

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- Almost all public high school graduates (more than 75 percent) took some occupational coursework in high school, regardless of their special or protected population status (table 2). This was true between 1982 and 1998 for each graduating class studied.[40]
- Between 1982 and 1998, most student groups earned at least 1.5 occupational credits on average (table 4),[41] and at least 15 percent of most identified groups earned 3.0 or more occupational credits during the period studied (table 12),[42] regardless of their special or protected population status.
- There was no significant difference in the average number of occupational credits earned by the 1982 and 1998 public high school graduates (3.03 credits and 2.87 credits, respectively) (table 4). However, trends varied somewhat among student groups.
- In particular, students with disabilities in grade 12 earned more occupational credits and students without such disabilities earned fewer occupational credits over the period studied (table 4). While there was no significant difference in the numbers of occupational credits earned by 1982 graduates with and without disabilities in grade 12, by 1998, students with disabilities in grade 12 earned 1.03 more occupational credits than their peers without such disabilities, a difference that is equivalent to about one full-year occupational course.
- Additionally, Hispanic graduates earned fewer occupational credits between 1982 and 1998, while there were no significant changes over the period in the numbers of such credits earned by the other racial/ethnic groups (table 4).
- The share of the total vocational/technical credits earned by graduates that were occupational credits increased from 59.4 percent for 1982 graduates to 68.4 percent for

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[40] The 67.5 percent of 1982 graduates who completed all high-level academic coursework in high school and who took some occupational coursework was not statistically different from 75.0 percent.

[41] The 1.82 occupational credits earned by 1982 graduates who had limited English proficiency in grade 12 and the occupational credits earned by 1982, 1990 and 1994 graduates who completed all high-level academic coursework in high school (1.51 credits, 1.53 credits, and 1.56 credits, respectively) were not statistically different from 1.5 credits.

[42] The 19.6 percent of 1982 graduates who had limited English proficiency in grade 12 and earned 3.0 or more occupational credits in high school and the percentages of 1982 and 1990 graduates who completed all high-level academic coursework in high school and earned 3.0 or more occupational credits (23.7 percent and 15.9 percent, respectively) were not statistically different from 15 percent.

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1998 graduates (table 6). This trend was evident for most graduates regardless of their special or protected population status. Exceptions included American Indians/Alaska Natives, graduates who were disabled in grade 12, and graduates who completed all low-level academic coursework in high school. No significant changes were detected over the period in the proportions of vocational/technical credits earned in the occupational curriculum by these groups.

Trends in Concentrating in Occupational Education

While the average number of occupational credits that 1998 graduates earned in high school was not statistically different from the average number earned by 1982 graduates, the percentage of public high school graduates who concentrated in occupational education (those who earned 3.0 or more credits in one of the 10 broad occupational program areas in figure 1) declined from 33.7 percent for 1982 graduates to 27.8 percent for 1990 graduates. After this year, the percentage of students concentrating was about 25.0 percent for each of the graduating classes studied through 1998 (table 13). However, trends varied among student groups.

- Most often, declines in occupational concentration rates occurred among groups with 1982 concentration rates that were not statistically different from the average for all 1982 graduates. This was true for Hispanics, Whites, graduates without disabilities in grade 12, graduates with a mid-range GPA (2.0 to 3.5), graduates completing mid-level or mixed academic coursework in high school, graduates taking mid-level mathematics in grade 9, and graduates from suburban or rural schools (table 13).[43]
- In addition, there were few significant changes detected between 1982 and 1998 in the concentration rates for several groups that exhibited *below*-average occupational concentration rates in 1982. These groups included Asians/Pacific Islanders, graduates with a high GPA (greater than 3.5), graduates who completed all high academic coursework in high school, and graduates who took high-level mathematics in grade 9 (table 13).[44]

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[43] Exceptions to this pattern included American Indians/Alaska Natives, Blacks, graduates with disabilities in grade 12, graduates with low GPAs, and graduates from urban schools, whose occupational concentration rates were not significantly different from the average for either 1982 or 1998 graduates.

[44] One exception to this pattern included females, who concentrated in occupational education at a below-average rate in 1982 and whose concentration rate declined between 1982 and 1998.

- However, a couple of groups with *above*-average occupational concentration rates in 1982 also exhibited declines in these concentration rates as of 1998, including males and graduates who took low-level mathematics in grade 9.[45]

As a consequence of these changes, most subgroups of graduates kept their relative occupational concentration status over the period studied. That is, most groups that exhibited *above*-average occupational concentration rates in 1982 still concentrated in occupational education at above-average rates as of 1998 (including males and graduates completing all low academic coursework in high school). In addition, most groups that exhibited *below*-average occupational concentration rates in 1982 still concentrated in occupational education at below-average rates as of 1998 (including females and high academic achievers). Finally, most groups that exhibited occupational concentration rates in 1982 that were not statistically different from the average for all 1982 graduates were also in this middle concentrating group as of 1998.

However, there were several exceptions to this overall pattern. Three groups that exhibited occupational concentration rates in 1982 that were not statistically different from the average for all 1982 graduates exhibited *above*-average occupational concentration rates as of 1998 (including graduates with disabilities in grade 12, graduates earning a low GPA, and graduates who attended rural schools). In comparison, graduates who took low-level mathematics in grade 9 (who exhibited *above*-average occupational concentration rates in 1982) exhibited occupational concentration rates in 1998 that were not statistically different from the average for all 1998 graduates. Finally, Asians/Pacific Islanders (who concentrated in occupational education in 1982 at rates that were *below*-average for all 1982 graduates) also exhibited occupational concentration rates in 1998 that were not statistically different from the average for all 1998 graduates.

Trends in Occupational Concentrating by Program Area

Trends in occupational concentrating (earning 3.0 or more credits in an occupational program area) varied widely among the 18 narrow program areas in figure 1. Program areas with declining rates of concentration included business services (table 18), materials production (table 28), and mechanics and repair (table 25). In contrast, program areas with increasing concentration rates included communications technology (table 33) and child care and education (table 36).[46] To some extent, these changes in concentrated coursetaking reflect changes in projected occupational employment over the period studied (Hurst and Hudson 2000). Exceptions to these overall trends among different student groups are listed below.

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[45] One other group that had an above-average occupational concentration rate in 1982 (graduates completing all low-level academic coursework in high school) did not exhibit a significant change in this concentration rate as of 1998.

[46] Although the percentage of public high school graduates concentrating in health care also appeared to increase between 1982 and 1998, this difference was not statistically significant.

Program Areas with Declining Overall Concentration Rates

- Male graduates were more likely to concentrate in business services in 1998 than in 1982, although female graduates who were members of the class of 1998 were still more likely than their male classmates to concentrate in this occupational program area (table 18). In addition, there was no significant change between 1982 and 1998 in rates of concentrating in business services for a few student groups, including American Indians/Alaska Natives, Asians/Pacific Islanders, students with disabilities in grade 12, and students completing either all low- or all high-level academic coursework in high school.
- Declines in mechanics and repair were limited to males, students without disabilities in grade 12, students completing mid-level or mixed academic coursework in high school, and students taking low-level mathematics in grade 9 (table 25). There were no significant changes between 1982 and 1998 in rates of concentrating in mechanics and repair for any other subgroup of graduates.[47]
- Declines in rates of concentrating in materials production between 1982 and 1998 were restricted to Hispanics, Whites, males, students without disabilities in grade 12, students with mid-level GPAs (2.0 to 3.5), and students completing mid-level or mixed academic coursework in high school (table 28). There were no significant changes between 1982 and 1998 in rates of concentrating in materials production for any other subgroup of graduates.[48]

Program Areas with Increasing Overall Concentration Rates

- In communications technology, only a few groups did not exhibit statistically significant increases in rates of concentrating between 1982 and 1998, including Blacks, Hispanics, students with disabilities in grade 12, students taking low-level mathematics in grade 9, and students in urban schools (table 33). No significant changes were detected for these five subgroups, while the communications technology concentration rates for all other identified subgroups increased between 1982 and 1998.
- In child care and education, increases in rates of concentrating were limited to Whites, females, students without disabilities in grade 12, students with mid-range GPAs (2.0 to 3.5), students who completed mid-level or mixed academic coursework in high

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[47] Although it appeared that American Indians/Alaska Natives, students who were disabled in grade 12, and students completing all low-level academic coursework increased their rates of concentrating in mechanics and repair, these apparent increases were not statistically significant.

[48] Although it appeared that American Indians/Alaska Natives increased their rate of concentrating in materials production between 1982 and 1998, this apparent increase was not statistically significant.

school, students who took mid-level grade 9 mathematics, and students who attended suburban schools (table 36). There were no significant changes between 1982 and 1998 in rates of concentrating in child care and education for other subgroups of graduates.

Program Areas with No Changes in Overall Concentration Rates

No significant changes between the classes of 1982 and 1998 were detected in overall rates of concentrating in agriculture (table 16), business management (table 19), marketing (table 20), protective services (table 22), construction (table 24), print production (table 27), "other" precision production (table 29), transportation (table 30), computer technology (table 32), "other" technologies (table 34), food service and hospitality (table 35), personal and other services (table 37), and health care (table 21).[49] Generally, program areas without significant changes in overall concentration rates between 1982 and 1998 exhibited few significant changes among the different subgroups of students. However, some exceptions to these trends are listed below.

- Some of these occupational program areas attracted more high-achieving groups of students over the period studied. Graduates who took high-level mathematics courses in grade 9 were *more* likely to concentrate in marketing (table 20), and graduates who completed all high-level academic coursework in high school were *more* likely to concentrate in print production and in computer technology (tables 27 and 32, respectively) between 1982 and 1998. However, graduates with a low GPA (less than 2.0) were *less* likely to concentrate in agriculture over the period (table 16).
- Only one other statistically significant change in concentration rates was detected among subgroups in these relatively steady program areas: male graduates were increasingly likely to concentrate in business management between 1982 and 1998 (table 19).

Trends in Participation Among Protected Populations

The following bullets describe trends in gaps in occupational concentration rates among protected populations based on race/ethnicity, sex, and disability status in grade 12 (as described in the Introduction). A majority of statistically significant differences in occupational concentration rates among racial/ethnic groups in 1982 were no longer detected by 1998. In contrast, most 1982 differences between males and females persisted as of 1998. However, some of these gender gaps decreased, particularly in business services where male graduates increased their concentration rate over the period. With regard to disability status in grade 12, in no program areas were students with disabilities more likely to concentrate than students without disabilities in 1982. However, by 1998, students with disabilities in grade 12 were more likely than those without to concentrate in agriculture, construction, mechanics and repair, and materials production.

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[49] As noted above, although the percentage of public high school graduates concentrating in health care appeared to increase between 1982 and 1998 by the largest amount for any program area, this difference was not statistically significant.

Racial/Ethnic Gaps in Concentration Rates

- Asians/Pacific Islanders were less likely than all other racial/ethnic groups in 1982 to concentrate in occupational education overall (earn 3.0 or more credits in one of the 10 broad occupational program areas in figure 1) (table 13). Asians/Pacific Islanders who were members of the class of 1982 were less likely than their peers from some other racial/ethnic groups to concentrate (earn 3.0 or more credits) in agriculture (table 16), business services (table 18), marketing (table 20), health care (table 21), construction (table 24), materials production (table 28), communications technology (table 33), food service and hospitality (table 35), and personal and other services (table 37).[50] However, gaps in five of these areas were no longer detected in 1998, including business services (table 18), marketing (table 20), health care (table 21), communications technology (table 33), and food service and hospitality (table 35). In contrast, gaps persisted in agriculture (table 16), materials production (table 28), and construction (table 24).[51]
- American Indians/Alaska Natives and Hispanics were less likely than Whites to concentrate in computer technology in 1982, although these gaps were no longer detected by 1998 (table 32). In contrast, Blacks were more likely than Hispanics and Whites to concentrate in materials production in 1982, and these gaps persisted in 1998 (table 28).

To some extent, diminishing racial/ethnic gaps were due to American Indians/Alaska Natives, Asians/Pacific Islanders, and Blacks concentrating in occupational education at overall rates that did not change significantly between 1982 and 1998, while the overall concentration rates of Hispanics and Whites declined during this period (table 13).[52]

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[50] Specifically, in 1982, Asians/Pacific Islanders were less likely than 1) Hispanics and Whites to concentrate in agriculture and in personal and other services; 2) Blacks, Hispanics, and Whites to concentrate in business services; 3) Blacks to concentrate in marketing; 4) Blacks and Whites to concentrate in health care; 5) Blacks and Hispanics to concentrate in the construction trades; 6) Hispanics to concentrate in materials production; and 7) Whites to concentrate in communications technology and in food service and hospitality.

[51] In agriculture, the gap between Asians/Pacific Islanders and Hispanics was no longer detected by 1998, while the gap between Asians/Pacific Islanders and Whites persisted. In materials production, the gap between Asians/Pacific Islanders and Hispanics was no longer detected by 1998, while the gap between Asians/Pacific Islanders and Blacks persisted. In construction, the gap between Asians/Pacific Islanders and Hispanics was no longer detected by 1998, while a gap between Asians/Pacific Islanders and Whites emerged and the gap between Asians/Pacific Islanders and Blacks persisted. There were too few Asians/Pacific Islanders concentrating in personal and other services in 1998 to produce a reliable estimate, so the trend in gaps from 1982 to 1998 in this program area could not be determined.

Gender Gaps in Concentration Rates

- Among 1982 graduates, males were more likely than females to concentrate in occupational education overall (earn 3.0 or more credits in one of the 10 broad occupational program areas in figure 1) (table 13). Specifically, this overall 1982 pattern existed in agriculture (table 16), construction (table 24), mechanics and repair (table 25), print production (table 27), materials production (table 28), and "other" technologies (table 34). However, females who were members of the class of 1982 were more likely than their male classmates to concentrate in business services (table 18), health care (table 21), child care and education (table 36), and personal and other services (table 37). All of these gender gaps persisted as of 1998.
- However, gender gaps decreased between 1982 and 1998 in business services, mechanics and repair, and materials production. In the first case, the gap diminished because males increased their concentration rate in business services while females decreased their concentration rate in this program area (table 18). In contrast, the gaps in mechanics and repair and materials production were not due to females being more likely to concentrate in these areas between 1982 and 1998, but rather to males being less likely to do so (tables 25 and 28, respectively).
- In child care and education, the gender gap increased over the period, due to an increase between 1982 and 1998 in the concentration rate of females in this program area (table 36).

Disability Status Gaps in Concentration Rates

- Among 1982 graduates, there was no significant difference between students with and without disabilities in grade 12 in their overall rates of concentrating in occupational education (earning 3.0 or more credits in one of the 10 broad occupational program areas in figure 1) (table 13). However, by 1998, students with disabilities in grade 12 were more likely than their peers without such disabilities to concentrate in occupational education. Specifically, this overall trend was noted in agriculture (table 16), construction (table 24), mechanics and repair (table 25), and materials production (table 28).

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[52] Although it appeared that American Indians/Alaska Natives were less likely to concentrate in occupational education in 1998 than in 1982, this difference was not statistically significant, perhaps due to the relatively small sample sizes and large standard errors for this group in each survey year.

  - Despite no significant difference in overall concentration rates between students with and without disabilities in grade 12 in 1982, students with disabilities in grade 12 who were members of the 1982 graduating class were less likely than their peers without such disabilities to concentrate in business services (table 18) and communications technology (table 33). However, with generally increasing occupational concentration rates for students with disabilities in grade 12 over the period studied, these gaps were no longer detected in 1998.

Trends in the Characteristics of Occupational Concentrators

Over time, some changes in the characteristics of occupational concentrators (graduates who earned 3.0 or more credits in one of the 10 broad occupational program areas in figure 1) were consistent with changes in the student body in general. In cases where trends for occupational concentrators were different from those for graduates in general, this pattern may signal that occupational programs attracted a different mix of students in 1998 than in 1982 that extended beyond general demographic and coursetaking trends. This section compares trends in the percentage distributions for all graduates in general (table 38) and for occupational concentrators in particular (table 39).

- Both public high school graduates in general (table 38) and occupational concentrators in particular (table 39) were more likely in 1998 than in 1982 to be Asian/Pacific Islander or Black, have no reported disabilities in grade 12, earn a mid- or high-level GPA (2.0 or higher), complete high-level academic coursework in high school, take mid- or high-level mathematics in grade 9, and attend urban schools.[53]
  - The proportion of occupational concentrators who took mid-level mathematics in grade 9 *grew more* than the corresponding proportion for graduates in general (increases of 18 percentage points versus 10 percentage points) (tables 39 and 38, respectively). No other significant differences were detected in the rates of change for occupational concentrators and all graduates on any other variables.

One discernible pattern from these findings is that both graduates in general and occupational concentrators in particular increased the level of their academic coursetaking between 1982 and 1998. However, the shift toward moderate academic achievement was greater for occupational concentrators than for the larger group of graduates.

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[53] The apparent increase in the percentage of occupational concentrators who attended urban schools was not statistically significant, although the increase for all graduates was. In contrast to these trends, between 1982 and 1998, both graduates in general and occupational concentrators in particular were less likely to earn a low-level GPA (less than 2.0); complete mid-level or mixed academic coursework in high school; take low-level mathematics in grade 9; and attend suburban schools.

Computer-Related Coursetaking

This section focuses on courses whose *primary objective* is to teach students computer-related skills and knowledge, referred to here as computer-related courses. As discussed in chapter 1, the course classification system used in this report places all computer-related courses (including those taught in mathematics and computer science departments) within the vocational/technical curriculum (figure 2). The summary presented here focuses on computer-related coursetaking in typewriting/keyboarding, business services, and computer technology, in addition to examining computer-related coursetaking overall.[54]

Computer-Related Coursetaking Among 1998 Graduates

Among the class of 1998, graduates with disabilities as of grade 12 took *less* computer-related coursework overall than their 1998 counterparts without such disabilities. In addition, graduates in low-poverty schools took less computer-related coursework than their counterparts in higher poverty schools. In contrast, graduates who were moderate academic achievers, who attended rural schools, or who were Black took *more* computer-related coursework overall than their 1998 peers who were lower academic achievers, who attended urban or suburban schools, or who were Asian/Pacific Islander, respectively. Few significant differences were detected as of 1998 with regard to coursetaking in the main computer-related sub-areas of typewriting/keyboarding, business services, and computer technology, although those differences that were detected were generally consistent with patterns for overall computer-related coursetaking. Generally, there was mixed evidence about the relationship between student advantage and the amount of computer-related coursework taken by 1998 graduates.

Overall Computer-Related Coursetaking Among 1998 Graduates

- The 1998 public high school graduates earned on average 1.05 credits in computer-related courses—equivalent to about one full-year computer-related course (table 41). The largest numbers of computer-related credits earned on average by 1998 graduates were in the areas of business services (0.33 credits), computer technology (0.31 credits), and typewriting/keyboarding (0.29 credits) in comparison with technology education and drafting/graphics (each with 0.06 credits).

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[54] As explained in chapter 1, all typewriting/keyboarding and all computer technology courses were considered to be computer related for this analysis. In contrast, only a subset of courses in business services was considered to be computer related.

- Graduates with disabilities in grade 12 took less computer-related coursework than their 1998 peers without disabilities as of this grade (table 41). In contrast, there was no significant difference between 1998 graduates who had limited English proficiency in grade 12 and their English proficient peers in the numbers of computer-related credits they earned in high school.
- The 1998 graduates who were moderate academic achievers—specifically, those with a mid-level GPA (2.0 to 3.5) or who completed mid-level or mixed academic coursework in high school—earned more total computer-related credits than their lower achieving counterparts (table 41).[55]
- Graduates in rural schools took *more* computer-related coursework than their counterparts in suburban or urban schools as of 1998 (table 41). In addition, Black graduates earned more computer-related credits than their 1998 peers who were Asian/Pacific Islander. In contrast, graduates in low-poverty schools took *less* computer-related coursework than their counterparts in middle- or high-poverty schools.[56] There was no significant difference between males and females who were members of the class of 1998 in the numbers of computer-related credits they earned in high school.

Computer-Related Coursetaking Among 1998 Graduates, By Sub-Area

Few significant differences were detected as of 1998 with regard to coursetaking in the main computer-related sub-areas of typewriting/keyboarding, business services, and computer technology (table 41). However, those differences that were detected were generally consistent with patterns for overall computer-related coursetaking.

- Among 1998 graduates, students who completed all low academic coursework in high school took less computer technology coursework than their more academically advantaged peers (table 41). However, students who attended low-poverty schools took less computer technology coursework than their peers in higher poverty schools.

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[55] No significant difference was detected between moderate academic achievers and their higher achieving counterparts on these two variables (GPA and academic coursework completed). In addition, no significant differences were detected in the total number of computer-related credits earned by graduates with regard to grade 9 mathematics.

[56] No significant difference was detected in the average number of computer-related credits earned by graduates in high-poverty and in middle-poverty schools.

- The 1998 graduates who attended rural schools took *more* typewriting/keyboarding than their peers in other schools (table 41).[57] In contrast, graduates with disabilities in grade 12 took *less* typewriting/keyboarding coursework than their 1998 peers without disabilities as of this grade.
- Female graduates took more typewriting/keyboarding and more computer-related business services coursework than their male peers as of 1998 (table 41).

Trends in Computer-Related Coursetaking

This section focuses on trends in computer-related coursetaking for the graduating classes from 1990 to 1998. No significant changes were detected in overall computer-related coursetaking over this period. However, patterns varied by computer-related sub-area. While coursetaking in computer technology and in computer-related business services was similar to the overall trend (with no significant changes detected for all graduates during the 1990s), coursetaking declined in typewriting/keyboarding over the same period.

Computer-related coursetaking trends also varied somewhat by student sub-group. Compared to their 1990 peers, 1998 graduates who had disabilities in grade 12 or who were male took *more* computer-related coursework overall and in business services. In addition, 1998 graduates with disabilities in grade 12 took more computer technology coursework than their 1990 peers. In contrast, 1998 graduates who were female took *less* computer-related coursework overall than their 1990 peers. The 1998 graduates who completed all high-level academic coursework in high school took *more* computer-related business services courses and *fewer* computer technology courses than the 1990 peers, with no significant change detected in their overall computer-related coursetaking during this period.

Computer-Related Coursetaking Overall

- There were no significant changes in computer-related coursetaking between 1990 and 1998 for graduates overall. Public high school graduates earned between 1.03 and 1.05 computer-related credits throughout the 1990s—equivalent to about one full-year computer-related course (table 42). However, trends varied somewhat among student groups. In particular, 1998 graduates who had disabilities in grade 12 or who were male took *more* computer-related coursework than their 1990 peers. In contrast, female graduates took *less* computer-related coursework in 1998 than their 1990 peers.

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[57] As explained in the Introduction, all basic typewriting/keyboarding courses for the classes of 1990 through 1998 were considered to be computer related.

Computer-Related Sub-Areas

Trends also varied by computer-related sub-area.

- The 1998 public high school graduates earned 0.15 fewer credits in typewriting/keyboarding than 1990 graduates (table 43). There was no significant change in the numbers of credits earned in computer-related business services and in computer technology by 1990 and 1998 graduates (tables 44 and 45).
- The number of typewriting/keyboarding credits that public high school graduates earned decreased between 1990 and 1998 for most identified student groups (table 43). However, no significant change was detected for several disadvantaged groups, including students with disabilities as of grade 12, students with limited English proficiency as of grade 12, and students who completed all low-level academic coursework in high school. In addition, no significant change in the number of typewriting/keyboarding credits was detected for American Indians/Alaska Natives and Asians/Pacific Islanders.
- Although no significant change was detected between 1990 and 1998 in the numbers of credits earned in computer-related business services by all graduates and by most student groups, there were some exceptions to this overall trend (table 44). Specifically, students with disabilities as of grade 12 and some high academic achievers (including graduates completing all high-level academic coursework in high school and those who took high-level mathematics coursework in grade 9) took more computer-related business services by the end of the period. In addition, males and Asians/Pacific Islanders who were member of the 1998 graduating class also earned more computer-related business services credits than their 1990 counterparts.
- Although there were no detectable changes between 1990 and 1998 in the numbers of credits earned in computer technology by all graduates and by most student groups, there were some exceptions to this trend (table 45). Specifically, 1998 graduates who were disabled in grade 12 earned *more* computer technology credits than their 1990 counterparts. In contrast, 1998 graduates who completed all high-level academic coursework in high school earned *fewer* computer technology credits than their 1990 counterparts.

Combining Vocational/Technical and Academic Coursetaking

This section examines some of the ways that public high school graduates combined academic and vocational/technical education between 1982 and 1998, focusing primarily on the academic coursetaking of occupational concentrators.[58]

Academic Coursetaking of 1998 Graduates

- For most identified student groups, 1998 graduates in general (table 47) earned more credits in core academic subjects (English, mathematics, science, and social studies) than occupational concentrators in particular (table 48). However, there were no significant differences between occupational concentrators and the larger group of 1998 graduates in the numbers of core academic credits earned by students with disabilities as of grade 12, who completed either all low- or all high-level academic coursework in high school, who took high-level mathematics coursework in grade 9, or who attended urban or high-poverty schools. In addition, no significant differences between occupational concentrators and all graduates were detected with regard to race/ethnicity, except among White graduates.
- Among the class of 1998, occupational concentrators who were members of more advantaged groups generally earned more core academic credits than occupational concentrators who were less advantaged (table 48). This was true with regard to disability status in grade 12, GPA, academic coursework completed, and grade 9 mathematics. However, no significant differences were detected among occupational concentrators with regard to school poverty level or school urbanicity. In addition, occupational concentrators who were Asian/Pacific Islander and were female earned more core academic credits than occupational concentrators who were members of other racial/ethnic groups and were male, respectively.[59]
- All of these 1998 patterns for occupational concentrators held for the larger group of public high school graduates as well (table 47).[60]

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[58] See Levesque (2003) for a more detailed examination of academic and vocational/technical coursetaking trends. There were too few 1998 occupational concentrators who had limited English proficiency in grade 12 to examine coursetaking for this group.

[59] No significant difference was detected in the number of core academic credits earned by occupational concentrators who were Asian/Pacific Islander and who were Black.

[60] The difference in number of core academic credits earned by all graduates who were Asian/Pacific Islander and were Black was statistically significant.

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Trends in Academic Coursetaking

This section examines trends in academic coursetaking for the graduating classes from 1982 to 1998.

- Both the larger group of 1998 public high school graduates (table 47) and the subset of these graduates who were occupational concentrators (table 48) earned more core academic credits than their 1982 counterparts, regardless of their special or protected population status.[61] For every identified student group, there was no significant difference in the rates of increase over the period in the number of core academic credits earned by all graduates and by occupational concentrators.
- However, among occupational concentrators, increases were smaller for students with disabilities in grade 12, American Indians/Alaska Natives, and males than for students without disabilities in grade 12, Hispanics, and females, respectively (table 48).[62]
- Similar to patterns for occupational concentrators, increases were smaller for all graduates with disabilities in grade 12, graduates who were American Indian/Alaska Native, and male graduates than for graduates without disabilities in grade 12, Hispanic graduates, and female graduates, respectively.

Conclusion

Various federal legislation is concerned with the participation of special and protected populations in education programs. This report examined the participation of public high school graduates in vocational/technical education between 1982 and 1998, focusing on the participation of graduates based on their special and protected population status.

Trends in participation for most subgroups reflected overall trends for graduates. Generally, graduates took fewer vocational courses between 1982 and 1998, although their occupational coursetaking was relatively steady. The percentage of graduates concentrating in occupational education (earning 3.0 or more credits in one of the 10 broad occupational program areas cited in the report) also declined over the period.

A few groups of graduates exhibited exceptions to these general trends, however. In particular, graduates with disabilities as of grade 12 took more vocational and occupational coursework by the end of the period studied. In addition, Asians/Pacific Islanders and high academic achievers earned numbers of vocational credits and exhibited occupational concentration rates at the end of the period that were not statistically different from corresponding figures for 1982. Thus, these latter groups did not exhibit the usual declines. Both Asians/Pacific Islanders and high academic achievers participated in vocational/technical education at below-average rates at the beginning of the period.

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[61] The only exception was that the 15.50 core academic credits earned by 1998 occupational concentrators with a high GPA (3.5 or higher) was not statistically different from the 12.77 core academic credits earned by1982 occupational concentrators with a high GPA.

[62] There were no other significant differences detected among racial/ethnic groups.

As of 1998, there were differences in participation in vocational/technical education on all of the variables examined in the report: race/ethnicity, sex, disability status, English proficiency, academic achievement, and school urbanicity and poverty level. In particular, groups exhibiting relatively high levels of participation in vocational/technical education in comparison with their peers included males, graduates with disabilities as of grade 12, low academic achievers, and graduates in rural and in high-poverty schools. In contrast, females, Asians/Pacific Islanders, and graduates who had limited English proficiency as of grade 12 exhibited relatively low levels of such participation.

With regard to computer-related coursetaking, groups exhibiting relatively low levels of participation in comparison with their 1998 peers included students with disabilities as of grade 12, low academic achievers, Asians/Pacific Islanders, and students in low-poverty and in urban and suburban schools. Among these groups, 1998 graduates who had disabilities as of grade 12 and graduates who were low academic achievers also earned fewer core academic credits than their more advantaged counterparts. However, 1998 graduates who were Asian/Pacific Islander as well as female graduates earned relatively large numbers of core academic credits in comparison with their peers. All of these core academic coursetaking patterns also held for the subset of graduates who were occupational concentrators.

On measures that classified students into three levels of advantage (low-, moderate- or middle-, and high-advantage), most occupational concentrators were from the middle groups. In some cases, occupational concentrators were more likely to be from the middle groups than was the 1998 public high school class as a whole. Although no significant difference was detected in the proportion of occupational concentrators and all graduates who were from the lowest academic achievement groups, occupational concentrators were less likely than the 1998 graduating class as a whole to be from the highest academic achievement groups.

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Tables

Table 1. **Percentage of public high school graduates taking vocational/technical education courses, by selected characteristics, including special and protected populations status: Various years, 1982–98**

	1982	1990	1992	1994	1998
Total	98.2	98.0	97.7	97.2	96.5
Race/ethnicity					
American Indian/Alaska Native	98.8	96.5	98.4	98.7	97.6
Asian/Pacific Islander	97.7	97.5	97.4	96.7	94.4
Black, non-Hispanic	99.2	98.8	97.3	98.4	98.4
Hispanic	99.2	98.6	98.6	98.7	97.7
White, non-Hispanic	97.8	97.7	97.7	97.0	96.1
Sex					
Male	98.0	98.2	97.9	97.6	97.0
Female	98.4	97.7	97.6	96.8	96.1
Disability status (grade 12)					
Has disability	99.4	99.8	—	99.2	99.1
No indicated disability	98.0	97.9	—	97.1	96.5
English proficiency (grade 12)					
Limited	—	97.1	—	97.0	95.8
Proficient	—	98.0	—	97.2	96.6
Grade-point average (GPA)					
High (greater than 3.5)	95.3	94.1	95.9	94.4	92.6
Mid-level (2.0 to 3.5)	98.2	98.1	97.7	97.4	97.3
Low (less than 2.0)	99.5	99.6	99.0	99.0	98.8
Academic coursework completed					
All high[1]	95.8	94.0	95.1	91.7	92.2
Mid-level or mixed[2]	98.1	98.4	98.1	98.1	97.3
All low[3]	100.0	99.8	98.7	99.9	99.5
Grade 9 mathematics					
High (geometry or higher)[4]	94.9	94.8	95.5	93.6	94.3
Mid-level (prealgebra or algebra 1)	98.1	97.9	97.7	97.5	96.8
Low (no or low mathematics)[5]	98.9	99.3	99.1	98.6	98.3
School urbanicity					
Urban	97.7	—	97.4	—	95.1
Suburban	97.9	—	97.6	—	96.1
Rural	98.9	—	98.1	—	98.4

See notes at end of table.

Table 1. Percentage of public high school graduates taking vocational/technical education courses, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	98.3	98.8
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	97.8	96.7
Low (5 percent or less in NSLP)	—	—	—	94.1	94.3
Not reported	—	—	—	97.3	96.8

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 2. Percentage of public high school graduates taking occupational courses, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	88.7	90.6	92.2	90.8	90.7
Race/ethnicity					
American Indian/Alaska Native	93.1	93.6	95.3	94.2	92.4
Asian/Pacific Islander	81.7	87.6	90.1	91.3	87.6
Black, non-Hispanic	88.4	91.9	91.7	92.3	92.2
Hispanic	90.4	94.2	93.5	94.1	92.0
White, non-Hispanic	88.5	90.2	92.2	90.4	90.3
Sex					
Male	91.1	93.7	93.6	92.5	92.7
Female	86.5	87.8	90.9	89.2	88.6
Disability status (grade 12)					
Has disability	87.7	90.9	—	92.3	92.1
No indicated disability	88.8	90.6	—	90.7	90.6
English proficiency (grade 12)					
Limited	—	87.4	—	87.4	86.4
Proficient	—	90.6	—	90.8	90.7
Grade-point average (GPA)					
High (greater than 3.5)	79.1	82.4	86.6	85.0	84.6
Mid-level (2.0 to 3.5)	88.9	91.0	92.4	91.2	91.8
Low (less than 2.0)	92.5	94.1	95.4	94.6	93.5
Academic coursework completed					
All high[1]	67.5	82.8	85.2	82.5	83.3
Mid-level or mixed[2]	88.7	91.4	93.2	92.2	92.0
All low[3]	95.2	95.4	96.7	95.8	94.9
Grade 9 mathematics					
High (geometry or higher)[4]	81.3	84.9	88.6	85.8	86.9
Mid-level (prealgebra or algebra 1)	87.9	90.6	92.4	91.2	91.4
Low (no or low mathematics)[5]	91.3	92.9	93.7	93.0	92.4
School urbanicity					
Urban	88.1	—	91.0	—	86.3
Suburban	88.1	—	92.0	—	89.9
Rural	89.8	—	93.3	—	95.3

See notes at end of table.

Table 2. Percentage of public high school graduates taking occupational courses, by selected characteristics, including special and protected populations status: Various years, 1982–98 —Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	93.4	94.4
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	91.4	90.6
Low (5 percent or less in NSLP)	—	—	—	87.0	88.5
Not reported	—	—	—	91.0	90.9

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 3. Average number of vocational/technical credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	4.68	4.19	3.99	3.96	3.99
Race/ethnicity					
American Indian/Alaska Native	4.93	4.62	4.79	4.26	4.02
Asian/Pacific Islander	3.31	3.07	3.40	3.01	3.15
Black, non-Hispanic	4.81	4.41	4.12	4.29	4.33
Hispanic	5.26	4.12	4.04	3.87	3.97
White, non-Hispanic	4.59	4.22	3.98	3.96	3.97
Sex					
Male	4.68	4.32	4.17	4.13	4.25
Female	4.67	4.08	3.81	3.80	3.77
Disability status (grade 12)					
Has disability	4.82	6.01	—	5.99	5.85
No indicated disability	4.67	4.14	—	3.88	3.94
English proficiency (grade 12)					
Limited	—	2.85	—	3.06	3.19
Proficient	—	4.20	—	3.97	4.00
Grade-point average (GPA)					
High (greater than 3.5)	3.35	2.59	2.61	2.60	2.82
Mid-level (2.0 to 3.5)	4.72	4.21	4.04	4.07	4.18
Low (less than 2.0)	5.17	5.03	4.80	4.73	4.81
Academic coursework completed					
All high[1]	2.66	2.22	2.25	2.14	2.59
Mid-level or mixed[2]	4.65	4.31	4.17	4.19	4.16
All low[3]	6.09	6.28	6.54	6.18	6.23
Grade 9 mathematics					
High (geometry or higher)[4]	3.11	2.68	2.62	2.56	3.04
Mid-level (prealgebra or algebra 1)	4.36	3.94	3.87	3.85	4.09
Low (no or low mathematics)[5]	5.41	5.32	5.03	5.16	4.76
School urbanicity					
Urban	4.28	—	3.70	—	3.55
Suburban	4.46	—	3.55	—	3.62
Rural	5.23	—	4.77	—	4.84

See notes at end of table.

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Table 3. Average number of vocational/technical credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	4.33	4.65
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	4.10	4.13
Low (5 percent or less in NSLP)	—	—	—	3.10	3.22
Not reported	—	—	—	4.10	3.85

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 4. Average number of occupational credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	3.03	2.89	2.84	2.79	2.87
Race/ethnicity					
American Indian/Alaska Native	3.40	3.16	3.73	2.84	2.92
Asian/Pacific Islander	2.01	2.07	2.53	2.13	2.30
Black, non-Hispanic	2.90	2.79	2.78	2.94	2.95
Hispanic	3.30	2.85	2.90	2.75	2.82
White, non-Hispanic	3.02	2.97	2.84	2.81	2.90
Sex					
Male	3.43	3.28	3.17	3.08	3.23
Female	2.66	2.53	2.52	2.52	2.54
Disability status (grade 12)					
Has disability	3.00	3.88	—	3.74	3.87
No indicated disability	3.03	2.86	—	2.76	2.84
English proficiency (grade 12)					
Limited	—	1.82	—	2.11	1.99
Proficient	—	2.89	—	2.80	2.88
Grade-point average (GPA)					
High (greater than 3.5)	2.05	1.75	1.82	1.83	2.02
Mid-level (2.0 to 3.5)	3.06	2.91	2.87	2.87	3.00
Low (less than 2.0)	3.39	3.48	3.43	3.34	3.57
Academic coursework completed					
All high[1]	1.51	1.53	1.65	1.56	1.94
Mid-level or mixed[2]	3.01	2.97	2.95	2.97	3.00
All low[3]	4.01	4.46	4.72	4.18	4.24
Grade 9 mathematics					
High (geometry or higher)[4]	2.03	1.85	1.95	1.83	2.31
Mid-level (prealgebra or algebra 1)	2.84	2.74	2.73	2.75	2.96
Low (no or low mathematics)[5]	3.48	3.63	3.57	3.54	3.22
School urbanicity					
Urban	2.83	—	2.64	—	2.60
Suburban	2.91	—	2.56	—	2.64
Rural	3.32	—	3.32	—	3.39

See notes at end of table.

Table 4. Average number of occupational credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98 —Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	2.95	3.30
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	2.90	2.97
Low (5 percent or less in NSLP)	—	—	—	2.25	2.22
Not reported	—	—	—	2.86	2.92

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table 5. Percentage of total credits earned by public high school graduates that are vocational/technical credits, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	21.8	17.9	16.8	16.5	15.9
Race/ethnicity					
American Indian/Alaska Native	22.9	20.4	20.2	17.5	16.5
Asian/Pacific Islander	14.9	12.9	14.1	12.5	12.6
Black, non-Hispanic	22.7	18.8	17.6	18.2	17.4
Hispanic	24.7	17.4	17.2	16.1	15.7
White, non-Hispanic	21.3	18.1	16.8	16.3	15.8
Sex					
Male	22.0	18.6	17.7	17.3	17.1
Female	21.7	17.3	16.0	15.7	14.9
Disability status (grade 12)					
Has disability	22.8	26.3	—	24.8	23.5
No indicated disability	21.7	17.7	—	16.2	15.7
English proficiency (grade 12)					
Limited	—	11.8	—	12.4	12.7
Proficient	—	18.0	—	16.5	15.9
Grade-point average (GPA)					
High (greater than 3.5)	14.4	10.5	10.3	10.2	10.5
Mid-level (2.0 to 3.5)	21.8	17.8	16.9	16.8	16.7
Low (less than 2.0)	25.6	22.7	21.4	21.1	20.9
Academic coursework completed					
All high[1]	11.9	8.8	9.0	8.4	9.6
Mid-level or mixed[2]	21.6	18.5	17.7	17.5	16.7
All low[3]	29.7	27.7	27.8	26.3	26.0
Grade 9 mathematics					
High (geometry or higher)[4]	13.8	11.0	10.5	10.3	11.5
Mid-level (prealgebra or algebra 1)	20.0	16.8	16.2	15.9	16.3
Low (no or low mathematics)[5]	25.9	23.3	21.9	22.0	19.8
School urbanicity					
Urban	20.3	—	15.7	—	14.2
Suburban	20.8	—	15.1	—	14.5
Rural	24.3	—	19.8	—	19.1

See notes at end of table.

Table 5. Percentage of total credits earned by public high school graduates that are vocational/technical credits, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	18.2	18.1
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	17.0	16.5
Low (5 percent or less in NSLP)	—	—	—	13.1	13.2
Not reported	—	—	—	17.1	15.2

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 6. Percentage of total vocational/technical credits earned by public high school graduates that are occupational credits, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	59.4	64.2	67.9	67.1	68.4
Race/ethnicity					
American Indian/Alaska Native	66.1	66.7	73.6	64.8	68.1
Asian/Pacific Islander	56.2	63.0	69.8	69.8	69.4
Black, non-Hispanic	55.2	59.6	64.6	64.8	65.5
Hispanic	58.8	65.9	67.9	69.2	67.2
White, non-Hispanic	60.1	64.9	68.3	67.3	69.1
Sex					
Male	67.9	71.9	72.7	71.5	72.9
Female	51.6	57.1	63.2	62.9	63.8
Disability status (grade 12)					
Has disability	56.7	60.4	—	62.1	62.9
No indicated disability	59.7	64.3	—	67.3	68.6
English proficiency (grade 12)					
Limited	—	58.7	—	62.7	59.9
Proficient	—	64.2	—	67.2	68.5
Grade-point average (GPA)					
High (greater than 3.5)	53.6	63.1	67.1	66.7	67.7
Mid-level (2.0 to 3.5)	59.7	64.3	67.9	67.2	68.3
Low (less than 2.0)	61.5	64.4	68.7	67.2	70.6
Academic coursework completed					
All high[1]	44.8	64.7	68.5	69.1	70.1
Mid-level or mixed[2]	59.5	64.1	67.7	67.0	68.4
All low[3]	64.0	66.3	70.2	65.6	64.9
Grade 9 mathematics					
High (geometry or higher)[4]	58.4	64.1	71.1	68.8	70.8
Mid-level (prealgebra or algebra 1)	58.9	64.7	67.7	67.4	68.6
Low (no or low mathematics)[5]	60.3	63.2	66.8	65.3	64.7
School urbanicity					
Urban	61.1	—	68.0	—	68.4
Suburban	60.0	—	68.8	—	68.8
Rural	57.7	—	66.7	—	67.9

See notes at end of table.

Table 6. Percentage of total vocational/technical credits earned by public high school graduates that are occupational credits, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	66.8	67.1
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	67.2	68.2
Low (5 percent or less in NSLP)	—	—	—	68.6	66.4
Not reported	—	—	—	65.9	72.1

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 7. **Percentage of vocational/technical credits earned by public high school graduates that were earned in the 9th grade, by selected characteristics, including special and protected populations status: Various years, 1982–98**

	1982	1990	1992	1994	1998
Total	17.0	18.1	19.3	19.7	20.7
Race/ethnicity					
American Indian/Alaska Native	16.6	15.9	23.3	20.7	23.7
Asian/Pacific Islander	20.0	20.8	21.8	22.4	21.0
Black, non-Hispanic	17.9	18.7	18.4	17.0	19.3
Hispanic	16.7	19.5	17.4	16.9	20.0
White, non-Hispanic	16.8	17.7	19.5	20.5	21.0
Sex					
Male	17.6	18.8	20.2	20.5	20.8
Female	16.4	17.4	18.4	18.9	20.1
Disability status (grade 12)					
Has disability	17.7	15.8	—	15.4	18.6
No indicated disability	16.9	18.2	—	19.9	20.8
English proficiency (grade 12)					
Limited	—	16.1	—	15.1	20.3
Proficient	—	18.1	—	19.7	20.7
Grade-point average (GPA)					
High (greater than 3.5)	20.4	21.9	22.9	24.4	25.9
Mid-level (2.0 to 3.5)	16.7	17.8	19.3	19.1	19.7
Low (less than 2.0)	16.2	17.1	16.6	18.3	18.9
Academic coursework completed					
All high[1]	20.3	22.9	22.3	23.4	24.8
Mid-level or mixed[2]	17.0	17.7	18.9	19.2	20.2
All low[3]	16.3	14.5	16.9	15.4	14.9
Grade 9 mathematics					
High (geometry or higher)[4]	18.5	21.9	22.1	20.7	22.9
Mid-level (prealgebra or algebra 1)	17.8	18.5	19.5	20.6	20.7
Low (no or low mathematics)[5]	15.6	15.8	17.2	16.6	18.0
School urbanicity					
Urban	17.0	—	18.9	—	20.9
Suburban	16.9	—	18.3	—	20.0
Rural	17.1	—	20.8	—	21.3

See notes at end of table.

Table 7. Percentage of vocational/technical credits earned by public high school graduates that were earned in the 9th grade, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	19.7	19.4
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	19.8	20.1
Low (5 percent or less in NSLP)	—	—	—	19.1	21.5
Not reported	—	—	—	19.7	23.1

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

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SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 8. Percentage of vocational/technical credits earned by public high school graduates that were earned in the 10th grade, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	19.9	18.7	19.7	19.1	19.5
Race/ethnicity					
American Indian/Alaska Native	22.6	20.4	18.8	21.1	16.9
Asian/Pacific Islander	21.7	18.2	19.3	19.9	21.0
Black, non-Hispanic	19.3	19.7	19.2	20.1	19.8
Hispanic	19.6	17.0	16.8	17.7	18.7
White, non-Hispanic	20.0	18.8	20.2	19.2	19.6
Sex					
Male	20.0	19.0	19.1	19.4	20.2
Female	19.8	18.5	20.4	18.8	19.0
Disability status (grade 12)					
Has disability	20.1	19.2	—	19.3	18.1
No indicated disability	19.9	18.7	—	19.1	19.6
English proficiency (grade 12)					
Limited	—	19.6	—	18.2	19.8
Proficient	—	18.7	—	19.1	19.5
Grade-point average (GPA)					
High (greater than 3.5)	21.5	20.6	21.3	20.4	21.9
Mid-level (2.0 to 3.5)	19.8	18.5	19.8	18.9	19.0
Low (less than 2.0)	19.4	18.5	18.1	19.2	19.4
Academic coursework completed					
All high[1]	20.4	20.1	22.0	21.5	21.5
Mid-level or mixed[2]	19.8	18.5	19.4	18.8	19.2
All low[3]	20.4	18.9	18.1	17.7	19.1
Grade 9 mathematics					
High (geometry or higher)[4]	19.4	19.4	21.4	22.3	20.9
Mid-level (prealgebra or algebra 1)	19.7	18.2	19.8	18.3	19.3
Low (no or low mathematics)[5]	20.2	19.5	18.7	19.3	18.8
School urbanicity					
Urban	19.1	—	19.5	—	19.9
Suburban	20.0	—	19.8	—	19.1
Rural	20.1	—	19.7	—	19.7

See notes at end of table.

Table 8. Percentage of vocational/technical credits earned by public high school graduates that were earned in the 10th grade, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	18.3	20.4
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	18.6	19.4
Low (5 percent or less in NSLP)	—	—	—	22.2	20.1
Not reported	—	—	—	18.7	18.8

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

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Table 9. Percentage of vocational/technical credits earned by public high school graduates that were earned in the 11th grade, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	28.8	24.9	24.4	23.9	23.6
Race/ethnicity					
American Indian/Alaska Native	30.1	26.8	24.6	21.4	25.5
Asian/Pacific Islander	30.3	27.6	23.4	24.7	25.7
Black, non-Hispanic	28.1	23.4	24.7	24.4	24.4
Hispanic	28.8	24.5	26.7	25.0	25.0
White, non-Hispanic	28.8	25.2	24.1	23.6	23.1
Sex					
Male	28.2	24.9	25.0	24.1	23.6
Female	29.3	24.9	23.9	23.7	23.6
Disability status (grade 12)					
Has disability	27.6	27.8	—	27.9	27.7
No indicated disability	28.9	24.8	—	23.8	23.5
English proficiency (grade 12)					
Limited	—	25.0	—	27.3	28.2
Proficient	—	24.9	—	23.9	23.6
Grade-point average (GPA)					
High (greater than 3.5)	26.1	23.2	23.5	22.5	21.7
Mid-level (2.0 to 3.5)	28.8	24.8	24.3	24.0	23.9
Low (less than 2.0)	29.8	26.2	25.9	24.7	24.7
Academic coursework completed					
All high[1]	25.8	23.4	22.6	22.1	23.3
Mid-level or mixed[2]	28.8	24.9	24.6	24.1	23.5
All low[3]	29.6	28.7	27.8	28.2	27.3
Grade 9 mathematics					
High (geometry or higher)[4]	25.8	22.8	22.4	23.0	22.3
Mid-level (prealgebra or algebra 1)	28.3	24.0	24.0	23.4	23.4
Low (no or low mathematics)[5]	29.9	27.7	26.6	25.8	26.0
School urbanicity					
Urban	29.0	—	24.4	—	23.4
Suburban	28.6	—	24.4	—	23.9
Rural	28.9	—	24.5	—	23.5

See notes at end of table.

Table 9. Percentage of vocational/technical credits earned by public high school graduates that were earned in the 11th grade, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	25.8	24.7
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	24.1	24.0
Low (5 percent or less in NSLP)	—	—	—	23.3	23.0
Not reported	—	—	—	23.1	22.0

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

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Table 10. Percentage of vocational/technical credits earned by public high school graduates that were earned in the 12th grade, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	34.4	38.3	36.6	37.3	36.2
Race/ethnicity					
American Indian/Alaska Native	30.8	36.9	33.4	36.8	33.9
Asian/Pacific Islander	28.0	33.4	35.5	33.0	32.4
Black, non-Hispanic	34.7	38.3	37.6	38.5	36.4
Hispanic	34.9	38.9	39.0	40.5	36.4
White, non-Hispanic	34.5	38.3	36.2	36.8	36.3
Sex					
Male	34.2	37.4	35.8	36.0	35.4
Female	34.6	39.1	37.3	38.5	37.3
Disability status (grade 12)					
Has disability	34.6	37.2	—	37.4	35.6
No indicated disability	34.4	38.3	—	37.3	36.2
English proficiency (grade 12)					
Limited	—	39.3	—	39.4	31.7
Proficient	—	38.3	—	37.3	36.2
Grade-point average (GPA)					
High (greater than 3.5)	32.1	34.3	32.3	32.7	30.5
Mid-level (2.0 to 3.5)	34.7	38.8	36.6	38.0	37.3
Low (less than 2.0)	34.6	38.2	39.4	37.8	37.0
Academic coursework completed					
All high[1]	33.6	33.6	33.1	33.0	30.4
Mid-level or mixed[2]	34.4	38.9	37.1	38.0	37.1
All low[3]	33.8	37.9	37.1	38.7	38.7
Grade 9 mathematics					
High (geometry or higher)[4]	36.4	35.9	34.2	34.0	33.9
Mid-level (prealgebra or algebra 1)	34.2	39.3	36.7	37.6	36.6
Low (no or low mathematics)[5]	34.3	37.0	37.4	38.3	37.1
School urbanicity					
Urban	34.9	—	37.1	—	35.7
Suburban	34.6	—	37.5	—	37.0
Rural	33.8	—	34.9	—	35.5

See notes at end of table.

Table 10. Percentage of vocational/technical credits earned by public high school graduates that were earned in the 12th grade, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	36.2	35.5
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	37.6	36.5
Low (5 percent or less in NSLP)	—	—	—	35.5	35.4
Not reported	—	—	—	38.5	36.1

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

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Table 11. Percentage of public high school graduates earning 3.0 or more vocational/technical credits, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	71.3	63.7	61.9	61.1	61.5
Race/ethnicity					
American Indian/Alaska Native	79.0	76.8	75.4	69.1	67.6
Asian/Pacific Islander	51.4	47.7	53.2	46.4	50.9
Black, non-Hispanic	76.6	70.8	68.0	68.6	68.4
Hispanic	78.9	65.7	64.8	62.5	64.3
White, non-Hispanic	69.6	63.0	60.8	60.5	60.3
Sex					
Male	70.7	65.3	65.1	62.9	65.0
Female	71.9	62.3	58.8	59.4	58.7
Disability status (grade 12)					
Has disability	74.7	86.7	—	83.7	83.0
No indicated disability	71.1	63.1	—	60.2	60.9
English proficiency (grade 12)					
Limited	—	41.7	—	49.2	52.2
Proficient	—	63.8	—	61.2	61.6
Grade-point average (GPA)					
High (greater than 3.5)	47.8	37.5	35.4	39.5	43.2
Mid-level (2.0 to 3.5)	71.3	63.5	62.5	62.4	64.4
Low (less than 2.0)	82.7	79.7	79.3	76.1	75.2
Academic coursework completed					
All high[1]	43.1	29.5	30.7	30.2	38.0
Mid-level or mixed[2]	71.0	66.4	65.9	65.6	64.9
All low[3]	88.3	91.4	90.0	88.9	86.5
Grade 9 mathematics					
High (geometry or higher)[4]	45.4	38.6	37.7	38.2	46.1
Mid-level (prealgebra or algebra 1)	67.8	61.1	60.8	60.9	63.5
Low (no or low mathematics)[5]	81.1	79.0	77.8	76.6	72.6
School urbanicity					
Urban	66.4	—	58.0	—	52.6
Suburban	67.7	—	55.4	—	56.2
Rural	79.6	—	73.0	—	75.7

See notes at end of table.

Table 11. Percentage of public high school graduates earning 3.0 or more vocational/technical credits, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	69.2	74.2
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	63.8	64.2
Low (5 percent or less in NSLP)	—	—	—	45.3	46.4
Not reported	—	—	—	62.6	59.4

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 12. **Percentage of public high school graduates earning 3.0 or more occupational credits, by selected characteristics, including special and protected populations status: Various years, 1982–98**

	1982	1990	1992	1994	1998
Total	46.2	43.0	42.2	42.0	43.8
Race/ethnicity					
American Indian/Alaska Native	61.0	52.5	57.8	42.9	43.4
Asian/Pacific Islander	30.7	31.6	38.5	31.0	33.5
Black, non-Hispanic	44.5	43.5	41.7	45.9	47.2
Hispanic	52.0	42.9	44.1	42.5	44.1
White, non-Hispanic	45.6	43.6	42.0	41.9	43.7
Sex					
Male	52.7	49.3	47.9	46.5	50.3
Female	40.2	37.2	36.6	37.7	38.2
Disability status (grade 12)					
Has disability	43.8	58.7	—	57.5	58.4
No indicated disability	46.4	42.5	—	41.4	43.4
English proficiency (grade 12)					
Limited	—	19.6	—	30.6	27.2
Proficient	—	43.1	—	42.1	44.0
Grade-point average (GPA)					
High (greater than 3.5)	27.3	21.9	22.6	23.7	28.8
Mid-level (2.0 to 3.5)	46.8	43.0	42.6	43.1	46.1
Low (less than 2.0)	53.7	55.2	55.6	54.3	56.7
Academic coursework completed					
All high[1]	23.7	15.9	18.3	18.4	26.5
Mid-level or mixed[2]	45.9	45.0	44.8	45.4	46.3
All low[3]	61.6	66.8	73.6	65.4	65.8
Grade 9 mathematics					
High (geometry or higher)[4]	29.1	22.3	24.4	23.0	33.2
Mid-level (prealgebra or algebra 1)	43.1	40.9	40.9	41.8	45.7
Low (no or low mathematics)[5]	53.9	55.5	55.1	54.9	49.6
School urbanicity					
Urban	42.6	—	39.2	—	38.3
Suburban	44.1	—	37.2	—	39.6
Rural	51.6	—	50.9	—	53.9

See notes at end of table.

Table 12. Percentage of public high school graduates earning 3.0 or more occupational credits, by selected characteristics, including special and protected populations status: Various years, 1982–98 —Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	45.1	53.9
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	44.1	45.8
Low (5 percent or less in NSLP)	—	—	—	29.8	30.0
Not reported	—	—	—	44.2	45.1

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 13. Percentage of public high school graduates concentrating in occupational education, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	33.7	27.8	24.9	25.4	25.0
Race/ethnicity					
American Indian/Alaska Native	46.6	38.0	34.3	20.9	25.5
Asian/Pacific Islander	17.6	16.6	20.4	14.2	16.8
Black, non-Hispanic	32.7	27.3	24.8	29.0	27.2
Hispanic	37.8	27.9	24.4	24.9	22.9
White, non-Hispanic	33.2	28.5	25.1	25.3	25.3
Sex					
Male	39.0	32.3	29.1	28.8	30.7
Female	28.7	23.6	20.9	22.3	19.9
Disability status (grade 12)					
Has disability	31.4	42.2	—	41.3	37.5
No indicated disability	33.8	27.4	—	24.8	24.6
English proficiency (grade 12)					
Limited	—	12.4	—	17.5	8.7
Proficient	—	27.8	—	25.5	25.1
Grade-point average (GPA)					
High (greater than 3.5)	18.0	11.1	10.9	12.7	15.0
Mid-level (2.0 to 3.5)	34.4	27.9	25.3	26.6	26.3
Low (less than 2.0)	38.9	36.9	34.2	31.8	35.2
Academic coursework completed					
All high[1]	18.2	7.4	8.1	8.6	14.2
Mid-level or mixed[2]	33.4	29.0	26.4	27.7	26.4
All low[3]	46.2	50.1	54.0	43.8	41.3
Grade 9 mathematics					
High (geometry or higher)[4]	18.2	12.0	12.1	12.1	17.5
Mid-level (prealgebra or algebra 1)	30.4	25.3	23.1	24.4	26.2
Low (no or low mathematics)[5]	41.1	39.3	36.7	37.0	29.6
School urbanicity					
Urban	30.8	—	21.4	—	23.1
Suburban	31.8	—	21.9	—	21.5
Rural	38.2	—	31.3	—	31.0

See notes at end of table.

Table 13. Percentage of public high school graduates concentrating in occupational education, by selected characteristics, including special and protected populations status: Various years, 1982–98 —Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	30.1	29.2
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	27.0	26.8
Low (5 percent or less in NSLP)	—	—	—	17.0	15.7
Not reported	—	—	—	25.6	25.2

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Occupational concentrators earned 3.0 or more credits in one of the following 10 broad occupational program areas: agriculture, business, marketing, health care, protective services, technology, trade and industry, food service and hospitality, child care and education, and personal and other services. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 14. Percentage of public high school graduates earning 3.0 or more occupational credits who concentrated in occupational education, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	72.8	64.6	59.1	60.6	57.0
Race/ethnicity					
American Indian/Alaska Native	76.4	72.4	59.3	48.7	58.8
Asian/Pacific Islander	57.4	52.7	52.9	45.7	50.2
Black, non-Hispanic	73.5	62.8	59.4	63.1	57.6
Hispanic	72.6	65.0	55.3	58.7	52.0
White, non-Hispanic	72.8	65.4	59.8	60.5	58.0
Sex					
Male	74.0	65.6	60.7	61.9	61.0
Female	71.4	63.5	57.0	59.1	52.0
Disability status (grade 12)					
Has disability	71.7	71.9	—	71.7	64.2
No indicated disability	72.8	64.4	—	60.0	56.7
English proficiency (grade 12)					
Limited	—	—	—	57.3	32.0
Proficient	—	64.7	—	60.6	57.1
Grade-point average (GPA)					
High (greater than 3.5)	66.1	50.8	48.3	53.8	52.1
Mid-level (2.0 to 3.5)	73.5	65.0	59.4	61.8	57.1
Low (less than 2.0)	72.6	66.8	61.5	58.5	62.0
Academic coursework completed					
All high[1]	77.1	46.5	44.2	46.8	53.8
Mid-level or mixed[2]	72.6	64.5	58.9	61.1	57.0
All low[3]	75.0	75.0	73.3	66.9	62.7
Grade 9 mathematics					
High (geometry or higher)[4]	62.5	53.8	49.6	52.4	52.6
Mid-level (prealgebra or algebra 1)	70.6	62.0	56.4	58.4	57.3
Low (no or low mathematics)[5]	76.3	70.7	66.5	67.3	59.6
School urbanicity					
Urban	72.2	—	54.7	—	60.3
Suburban	72.1	—	58.8	—	54.2
Rural	74.1	—	61.6	—	57.5

See notes at end of table.

Table 14. Percentage of public high school graduates earning 3.0 or more occupational credits who concentrated in occupational education, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	66.8	54.2
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	61.1	58.6
Low (5 percent or less in NSLP)	—	—	—	57.0	52.3
Not reported	—	—	—	57.9	55.9

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Occupational concentrators earned 3.0 or more credits in one of the following 10 broad occupational program areas: agriculture, business, marketing, health care, protective services, technology, trade and industry, food service and hospitality, child care and education, and personal and other services. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 15. Percentage of public high school graduates completing an advanced concentration in occupational education, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	24.0	16.1	16.2	14.5	14.4
Race/ethnicity					
American Indian/Alaska Native	25.9	22.7	26.2	10.5	13.2
Asian/Pacific Islander	11.3	8.8	15.5	8.7	9.5
Black, non-Hispanic	21.4	16.3	13.4	15.2	17.6
Hispanic	25.1	15.3	16.0	13.2	12.9
White, non-Hispanic	24.3	16.7	16.6	14.9	14.4
Sex					
Male	26.8	19.0	19.6	16.5	18.5
Female	21.5	13.5	12.9	12.7	10.9
Disability status (grade 12)					
Has disability	20.9	17.7	—	22.8	18.1
No indicated disability	24.3	16.1	—	14.2	14.3
English proficiency (grade 12)					
Limited	—	6.4	—	9.3	6.3
Proficient	—	16.2	—	14.6	14.5
Grade-point average (GPA)					
High (greater than 3.5)	14.0	6.6	6.7	6.7	8.0
Mid-level (2.0 to 3.5)	25.1	16.2	16.8	15.5	15.6
Low (less than 2.0)	25.2	21.6	20.9	17.1	18.2
Academic coursework completed					
All high[1]	12.4	4.9	5.5	4.7	9.0
Mid-level or mixed[2]	23.8	16.9	17.0	15.9	15.2
All low[3]	33.9	29.3	37.6	27.1	23.9
Grade 9 mathematics					
High (geometry or higher)[4]	12.7	7.6	8.4	7.1	10.7
Mid-level (prealgebra or algebra 1)	21.6	15.3	14.9	14.0	15.2
Low (no or low mathematics)[5]	29.5	21.2	23.9	20.8	16.2
School urbanicity					
Urban	20.9	—	14.9	—	13.8
Suburban	23.7	—	13.5	—	13.0
Rural	26.3	—	20.7	—	16.8

See notes at end of table.

Table 15. Percentage of public high school graduates completing an advanced concentration in occupational education, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	14.7	18.4
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	14.8	15.0
Low (5 percent or less in NSLP)	—	—	—	10.3	9.2
Not reported	—	—	—	17.3	15.3

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: An advanced occupational concentration includes 3.0 or more credits in one of the 10 broad occupational program areas listed in figure 1, with at least 1.0 credit in second- or higher-level and cooperative education courses in the area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 16. Percentage of public high school graduates concentrating in agriculture, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	2.8	2.5	2.3	3.2	2.6
Race/ethnicity					
American Indian/Alaska Native	1.6	4.6	3.4	4.6	2.5
Asian/Pacific Islander	0.5	‡	0.5	1.6	0.8
Black, non-Hispanic	0.9	0.5	1.1	1.3	0.8
Hispanic	2.8	1.9	0.9	1.4	1.5
White, non-Hispanic	3.1	3.1	2.8	3.7	3.2
Sex					
Male	5.0	4.1	3.8	5.0	3.5
Female	0.7	1.1	0.8	1.4	1.8
Disability status (grade 12)					
Has disability	2.2	7.0	—	7.9	6.9
No indicated disability	2.8	2.4	—	3.0	2.4
English proficiency (grade 12)					
Limited	—	‡	—	2.1	‡
Proficient	—	2.6	—	3.2	2.6
Grade-point average (GPA)					
High (greater than 3.5)	2.3	1.1	1.1	2.5	2.5
Mid-level (2.0 to 3.5)	2.7	2.8	2.5	3.4	2.7
Low (less than 2.0)	3.3	2.5	2.1	2.8	1.1
Academic coursework completed					
All high[1]	0.6	0.4	0.3	0.8	0.4
Mid-level or mixed[2]	2.8	2.6	2.4	3.5	2.9
All low[3]	3.4	5.8	4.9	3.4	2.3
Grade 9 mathematics					
High (geometry or higher)[4]	0.8	0.5	0.7	0.9	1.2
Mid-level (prealgebra or algebra 1)	2.4	2.1	1.7	3.1	2.9
Low (no or low mathematics)[5]	3.6	4.4	4.5	4.8	2.8
School urbanicity					
Urban	0.5	—	0.2	—	0.4
Suburban	1.7	—	1.1	—	1.2
Rural	5.8	—	5.2	—	6.1

See notes at end of table.

Table 16. Percentage of public high school graduates concentrating in agriculture, by selected characteristics, including special and protected populations status: Various years, 1982–98 —Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	4.4	4.0
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	3.5	2.9
Low (5 percent or less in NSLP)	—	—	—	0.9	1.1
Not reported	—	—	—	3.6	1.8

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Agriculture concentrators earned 3.0 or more credits in the agriculture program area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 17. Percentage of public high school graduates concentrating in business, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	11.6	8.4	7.5	7.7	4.8
Race/ethnicity					
American Indian/Alaska Native	6.4	10.8	2.7	7.6	3.6
Asian/Pacific Islander	4.1	5.7	5.7	5.3	3.7
Black, non-Hispanic	11.3	11.5	7.8	10.5	7.0
Hispanic	10.2	10.3	8.6	8.3	4.3
White, non-Hispanic	12.0	7.8	7.4	7.2	4.6
Sex					
Male	2.1	3.2	3.5	4.0	3.2
Female	20.3	13.3	11.4	11.2	6.3
Disability status (grade 12)					
Has disability	7.5	1.9	—	5.5	4.0
No indicated disability	11.9	8.6	—	7.8	4.9
English proficiency (grade 12)					
Limited	—	‡	—	8.3	2.2
Proficient	—	8.5	—	7.7	4.9
Grade-point average (GPA)					
High (greater than 3.5)	11.7	4.9	4.9	5.1	4.2
Mid-level (2.0 to 3.5)	12.6	9.1	7.8	8.3	5.1
Low (less than 2.0)	7.8	8.0	7.6	7.2	3.7
Academic coursework completed					
All high[1]	7.0	3.0	3.1	3.5	3.6
Mid-level or mixed[2]	11.7	9.3	8.4	8.5	5.0
All low[3]	10.2	6.7	5.0	8.2	6.5
Grade 9 mathematics					
High (geometry or higher)[4]	9.8	3.8	5.1	4.2	3.4
Mid-level (prealgebra or algebra 1)	11.4	8.9	8.2	8.3	5.4
Low (no or low mathematics)[5]	12.1	9.2	6.8	8.3	4.6
School urbanicity					
Urban	10.9	11.3	6.9	7.6	4.7
Suburban	10.8	6.9	6.4	6.7	3.7
Rural	13.0	8.9	9.3	8.6	6.4

See notes at end of table.

Table 17. Percentage of public high school graduates concentrating in business, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	4.9	8.5	6.5
Middle (greater than 5 to 50 percent in NSLP)	—	—	8.1	7.8	4.8
Low (5 percent or less in NSLP)	—	—	9.9	5.0	3.2
Not reported	—	—	7.0	9.2	5.7

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Business concentrators earned 3.0 or more credits in the broad business program area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 18. Percentage of public high school graduates concentrating in business services, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	9.3	6.5	4.8	5.4	3.3
Race/ethnicity					
American Indian/Alaska Native	4.7	8.6	1.4	6.2	1.8
Asian/Pacific Islander	2.6	3.5	3.9	3.7	3.1
Black, non-Hispanic	8.9	9.0	5.4	7.8	4.6
Hispanic	8.0	8.7	6.3	7.2	3.2
White, non-Hispanic	9.7	6.0	4.6	4.9	3.0
Sex					
Male	0.9	1.8	1.5	2.3	2.2
Female	17.1	10.8	8.1	8.3	4.2
Disability status (grade 12)					
Has disability	6.0	1.7	—	3.8	3.2
No indicated disability	9.5	6.7	—	5.4	3.3
English proficiency (grade 12)					
Limited	—	‡	—	7.5	2.0
Proficient	—	6.5	—	5.4	3.3
Grade-point average (GPA)					
High (greater than 3.5)	8.9	3.5	3.0	3.7	2.8
Mid-level (2.0 to 3.5)	10.5	7.1	5.2	5.9	3.5
Low (less than 2.0)	5.2	5.8	4.2	4.4	2.4
Academic coursework completed					
All high[1]	6.2	1.9	1.8	2.3	2.7
Mid-level or mixed[2]	9.3	7.2	5.5	6.0	3.3
All low[3]	9.2	5.5	2.7	5.4	4.7
Grade 9 mathematics					
High (geometry or higher)[4]	8.7	2.3	2.8	2.8	2.1
Mid-level (prealgebra or algebra 1)	8.9	6.9	5.2	5.8	3.7
Low (no or low mathematics)[5]	9.9	7.4	4.9	5.8	3.2
School urbanicity					
Urban	8.6	—	4.9	—	3.4
Suburban	9.2	—		—	2.3
Rural	9.9	—	5.6	—	4.4

See notes at end of table.

Table 18. Percentage of public high school graduates concentrating in business services, by selected characteristics, including special and protected populations status: Various years, 1982–98 —Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	7.0	4.6
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	5.4	3.2
Low (5 percent or less in NSLP)	—	—	—	3.1	2.0
Not reported	—	—	—	6.5	4.2

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Business services concentrators earned 3.0 or more credits in the business services program area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 19. **Percentage of public high school graduates concentrating in business management, by selected characteristics, including special and protected populations status: Various years, 1982–98**

	1982	1990	1992	1994	1998
Total	0.2	0.2	0.3	0.3	0.4
Race/ethnicity					
American Indian/Alaska Native	‡	‡	‡	‡	‡
Asian/Pacific Islander	0.3	‡	0.1	‡	‡
Black, non-Hispanic	0.3	‡	0.1	0.5	0.4
Hispanic	‡	‡	0.5	0.3	0.5
White, non-Hispanic	0.2	0.2	0.3	0.3	0.4
Sex					
Male	0.1	0.1	0.1	0.2	0.2
Female	0.2	0.3	0.5	0.4	0.6
Disability status (grade 12)					
Has disability	0.1	‡	—	0.9	0.4
No indicated disability	0.2	0.2	—	0.3	0.4
English proficiency (grade 12)					
Limited	—	‡	—	‡	‡
Proficient	—	0.2	—	0.3	0.4
Grade-point average (GPA)					
High (greater than 3.5)	0.4	‡	‡	0.1	0.2
Mid-level (2.0 to 3.5)	0.1	0.2	0.3	0.3	0.5
Low (less than 2.0)	0.2	0.2	0.3	0.4	0.2
Academic coursework completed					
All high[1]	‡	‡	0.2	0.1	0.2
Mid-level or mixed[2]	0.2	0.2	0.3	0.3	0.5
All low[3]	‡	‡	0.3	0.6	0.7
Grade 9 mathematics					
High (geometry or higher)[4]	0.1	‡	0.2	0.1	0.4
Mid-level (prealgebra or algebra 1)	0.1	0.1	0.3	0.2	0.5
Low (no or low mathematics)[5]	0.3	0.3	0.2	0.6	0.3
School urbanicity					
Urban	0.2	—	0.4	—	0.3
Suburban	‡	—	0.2	—	0.4
Rural	0.3	—	0.3	—	0.6

See notes at end of table.

Table 19. Percentage of public high school graduates concentrating in business management, by selected characteristics, including special and protected populations status: Various years, 1982–98 —Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	‡	0.6
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	0.3	0.3
Low (5 percent or less in NSLP)	—	—	—	0.2	0.4
Not reported	—	—	—	0.4	0.8

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Business management concentrators earned 3.0 or more credits in the business management program area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 20. Percentage of public high school graduates concentrating in marketing, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	1.8	2.1	1.3	2.2	1.8
Race/ethnicity					
American Indian/Alaska Native	1.0	‡	‡	‡	‡
Asian/Pacific Islander	0.4	‡	0.3	0.4	0.9
Black, non-Hispanic	2.6	2.3	2.0	2.6	2.4
Hispanic	1.8	2.6	1.0	2.0	2.2
White, non-Hispanic	1.7	2.2	1.3	2.3	1.7
Sex					
Male	1.6	1.8	1.1	1.5	1.7
Female	2.0	2.4	1.4	2.8	2.0
Disability status (grade 12)					
Has disability	1.9	1.4	—	1.5	1.0
No indicated disability	1.8	2.1	—	2.2	1.8
English proficiency (grade 12)					
Limited	—	‡	—	1.6	‡
Proficient	—	2.1	—	2.2	1.8
Grade-point average (GPA)					
High (greater than 3.5)	0.3	0.9	0.1	0.8	0.7
Mid-level (2.0 to 3.5)	1.7	2.1	1.2	2.4	2.0
Low (less than 2.0)	2.9	2.9	2.4	2.5	2.6
Academic coursework completed					
All high[1]	1.4	0.3	0.3	0.7	0.8
Mid-level or mixed[2]	1.8	2.4	1.4	2.4	2.0
All low[3]	1.5	1.5	1.4	2.0	1.6
Grade 9 mathematics					
High (geometry or higher)[4]	0.3	0.9	0.4	1.1	1.3
Mid-level (prealgebra or algebra 1)	1.9	2.2	1.3	2.2	2.0
Low (no or low mathematics)[5]	1.9	2.4	1.8	2.6	1.7
School urbanicity					
Urban	2.2	—	2.0	—	2.4
Suburban	1.9	—	1.1	—	2.3
Rural	1.4	—	1.0	—	0.7

See notes at end of table.

Table 20. Percentage of public high school graduates concentrating in marketing, by selected characteristics, including special and protected populations status: Various years, 1982–98 —Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	2.3	1.3
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	2.4	2.1
Low (5 percent or less in NSLP)	—	—	—	1.6	0.9
Not reported	—	—	—	1.6	1.8

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Marketing concentrators earned 3.0 or more credits in the marketing program area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 21. **Percentage of public high school graduates concentrating in health care, by selected characteristics, including special and protected populations status: Various years, 1982–98**

	1982	1990	1992	1994	1998
Total	0.6	0.6	0.6	1.0	1.9
Race/ethnicity					
American Indian/Alaska Native	0.9	‡	0.5	‡	‡
Asian/Pacific Islander	‡	‡	1.3	0.7	2.1
Black, non-Hispanic	1.5	0.5	0.9	1.3	4.7
Hispanic	1.1	0.2	0.6	0.9	2.1
White, non-Hispanic	0.4	0.7	0.5	0.9	1.3
Sex					
Male	0.2	0.2	0.2	0.3	0.7
Female	1.0	0.9	1.1	1.6	3.0
Disability status (grade 12)					
Has disability	0.7	2.6	—	0.6	1.4
No indicated disability	0.6	0.5	—	1.0	1.9
English proficiency (grade 12)					
Limited	—	‡	—	‡	‡
Proficient	—	0.6	—	1.0	1.9
Grade-point average (GPA)					
High (greater than 3.5)	0.1	0.2	0.2	0.5	1.3
Mid-level (2.0 to 3.5)	0.7	0.6	0.7	1.1	2.0
Low (less than 2.0)	0.7	0.8	0.7	0.9	2.2
Academic coursework completed					
All high[1]	0.9	‡	0.2	0.4	2.3
Mid-level or mixed[2]	0.6	0.6	0.7	1.1	1.8
All low[3]	1.0	1.1	1.0	1.6	1.2
Grade 9 mathematics					
High (geometry or higher)[4]	0.1	0.3	‡	0.5	3.3
Mid-level (prealgebra or algebra 1)	0.3	0.5	0.4	1.0	1.6
Low (no or low mathematics)[5]	1.1	0.8	1.4	1.2	1.3
School urbanicity					
Urban	0.4	—	0.5	—	3.4
Suburban	0.5	—	0.6	—	1.1
Rural	0.8	—	0.7	—	1.4

See notes at end of table.

Table 21. Percentage of public high school graduates concentrating in health care, by selected characteristics, including special and protected populations status: Various years, 1982–98 —Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	1.0	3.6
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	1.1	1.9
Low (5 percent or less in NSLP)	—	—	—	0.8	1.3
Not reported	—	—	—	0.8	1.2

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Health care concentrators earned 3.0 or more credits in the health care program area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 22. Percentage of public high school graduates concentrating in protective services, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	‡	‡	0.1	0.1	0.1
Race/ethnicity					
American Indian/Alaska Native	‡	‡	‡	‡	‡
Asian/Pacific Islander	‡	‡	0.1	‡	‡
Black, non-Hispanic	0.1	‡	0.1	0.1	0.2
Hispanic	‡	‡	‡	‡	‡
White, non-Hispanic	‡	‡	0.1	‡	0.1
Sex					
Male	‡	‡	0.1	0.1	0.1
Female	0.1	‡	0.1	‡	‡
Disability status (grade 12)					
Has disability	0.1	‡	—	0.3	‡
No indicated disability	‡	‡	—	‡	0.1
English proficiency (grade 12)					
Limited	—	‡	—	‡	‡
Proficient	—	‡	—	0.1	0.1
Grade-point average (GPA)					
High (greater than 3.5)	‡	‡	‡	‡	‡
Mid-level (2.0 to 3.5)	‡	‡	0.1	‡	0.1
Low (less than 2.0)	‡	‡	‡	0.2	‡
Academic coursework completed					
All high[1]	‡	‡	‡	‡	‡
Mid-level or mixed[2]	‡	‡	0.1	0.1	0.1
All low[3]	‡	‡	‡	‡	0.6
Grade 9 mathematics					
High (geometry or higher)[4]	‡	‡	0.1	‡	‡
Mid-level (prealgebra or algebra 1)	‡	‡	0.1	‡	0.1
Low (no or low mathematics)[5]	‡	‡	0.1	0.1	0.2
School urbanicity					
Urban	‡	—	0.1	—	0.1
Suburban	‡	—	‡	—	0.1
Rural	0.1	—	0.1	—	‡

See notes at end of table.

Table 22. Percentage of public high school graduates concentrating in protective services, by selected characteristics, including special and protected populations status: Various years, 1982–98 —Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	0.2	0.1
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	0.1	0.1
Low (5 percent or less in NSLP)	—	—	—	‡	0.1
Not reported	—	—	—	‡	‡

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Protective services concentrators earned 3.0 or more credits in the protective services program area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 23. Percentage of public high school graduates concentrating in trade and industry program areas, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	14.8	11.3	9.9	8.5	9.8
Race/ethnicity					
American Indian/Alaska Native	34.8	15.5	23.4	5.4	13.6
Asian/Pacific Islander	11.3	9.7	12.0	4.8	6.7
Black, non-Hispanic	14.0	7.9	7.1	7.8	7.2
Hispanic	19.7	9.1	9.4	8.1	9.1
White, non-Hispanic	13.8	12.2	10.1	8.7	10.6
Sex					
Male	29.0	21.5	18.3	16.2	18.5
Female	1.6	2.0	1.8	1.2	1.7
Disability status (grade 12)					
Has disability	16.3	23.1	—	20.2	18.7
No indicated disability	14.6	10.9	—	8.1	9.5
English proficiency (grade 12)					
Limited	—	3.2	—	2.3	5.2
Proficient	—	11.3	—	8.6	9.8
Grade-point average (GPA)					
High (greater than 3.5)	3.3	2.6	2.3	2.1	3.0
Mid-level (2.0 to 3.5)	14.5	10.6	9.8	8.6	10.3
Low (less than 2.0)	21.5	19.3	16.8	14.6	20.8
Academic coursework completed					
All high[1]	8.3	2.2	2.2	1.7	3.5
Mid-level or mixed[2]	14.4	11.3	10.2	9.2	10.5
All low[3]	26.2	29.6	34.1	21.8	23.2
Grade 9 mathematics					
High (geometry or higher)[4]	6.3	4.2	3.7	3.1	4.6
Mid-level (prealgebra or algebra 1)	12.2	9.5	8.4	7.3	10.2
Low (no or low mathematics)[5]	20.0	18.0	17.3	15.4	14.4
School urbanicity					
Urban	13.2	—	8.2	—	8.0
Suburban	14.7	—	9.2	—	8.9
Rural	15.8	—	12.1	—	12.5

See notes at end of table.

Table 23. Percentage of public high school graduates concentrating in trade and industry program areas, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	9.8	10.3
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	9.0	10.8
Low (5 percent or less in NSLP)	—	—	—	6.8	5.7
Not reported	—	—	—	8.0	9.9

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Trade and industry concentrators earned 3.0 or more credits in the broad trade and industry program area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 24. Percentage of public high school graduates concentrating in construction, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	1.5	1.1	1.2	1.0	1.3
Race/ethnicity					
American Indian/Alaska Native	4.2	‡	0.9	‡	‡
Asian/Pacific Islander	0.3	‡	0.4	0.4	0.3
Black, non-Hispanic	3.1	1.8	1.8	1.6	1.6
Hispanic	2.0	0.4	0.6	1.0	0.6
White, non-Hispanic	1.2	1.1	1.3	0.9	1.4
Sex					
Male	3.0	2.3	2.2	2.0	2.6
Female	0.1	‡	0.3	0.1	0.1
Disability status (grade 12)					
Has disability	2.3	3.7	—	3.4	3.8
No indicated disability	1.4	1.1	—	0.9	1.2
English proficiency (grade 12)					
Limited	—	‡	—	‡	‡
Proficient	—	1.1	—	1.0	1.3
Grade-point average (GPA)					
High (greater than 3.5)	0.1	‡	0.2	0.2	0.2
Mid-level (2.0 to 3.5)	1.4	1.0	1.1	1.0	1.4
Low (less than 2.0)	2.5	2.4	2.8	2.1	2.6
Academic coursework completed					
All high[1]	‡	‡	‡	‡	0.3
Mid-level or mixed[2]	1.4	1.2	1.2	1.1	1.3
All low[3]	3.7	2.6	5.9	3.0	5.4
Grade 9 mathematics					
High (geometry or higher)[4]	0.2	‡	0.1	0.1	0.5
Mid-level (prealgebra or algebra 1)	1.0	0.7	1.1	0.7	1.3
Low (no or low mathematics)[5]	2.5	2.4	2.2	2.5	2.0
School urbanicity					
Urban	1.4	—	0.8	—	1.0
Suburban	0.8	—	1.0	—	0.6
Rural	2.6	—	1.7	—	2.4

See notes at end of table.

Table 24. Percentage of public high school graduates concentrating in construction, by selected characteristics, including special and protected populations status: Various years, 1982–98 —Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	1.4	1.6
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	1.1	1.4
Low (5 percent or less in NSLP)	—	—	—	0.4	1.1
Not reported	—	—	—	1.1	0.8

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Construction concentrators earned 3.0 or more credits in the construction program area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 25. Percentage of public high school graduates concentrating in mechanics and repair, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	3.0	2.3	1.9	1.6	1.8
Race/ethnicity					
American Indian/Alaska Native	1.4	‡	7.0	‡	3.8
Asian/Pacific Islander	1.5	1.8	1.6	1.2	0.9
Black, non-Hispanic	2.8	1.2	1.2	1.8	1.4
Hispanic	4.2	2.1	1.2	2.1	2.1
White, non-Hispanic	2.8	2.6	2.0	1.6	1.9
Sex					
Male	6.2	4.6	3.7	3.2	3.6
Female	0.1	0.2	‡	0.1	0.2
Disability status (grade 12)					
Has disability	3.1	5.7	—	4.7	4.7
No indicated disability	3.0	2.2	—	1.5	1.7
English proficiency (grade 12)					
Limited	—	‡	—	‡	1.4
Proficient	—	2.3	—	1.7	1.8
Grade-point average (GPA)					
High (greater than 3.5)	0.3	0.3	0.1	0.1	0.1
Mid-level (2.0 to 3.5)	2.7	2.2	1.9	1.6	1.9
Low (less than 2.0)	5.6	4.1	3.2	3.3	4.9
Academic coursework completed					
All high[1]	2.5	‡	‡	0.1	0.3
Mid-level or mixed[2]	2.9	2.3	1.8	1.8	1.9
All low[3]	5.8	7.4	10.1	4.8	7.7
Grade 9 mathematics					
High (geometry or higher)[4]	0.4	0.4	0.7	0.3	0.6
Mid-level (prealgebra or algebra 1)	2.0	1.7	1.2	1.3	1.9
Low (no or low mathematics)[5]	4.9	4.4	4.3	3.5	3.0
School urbanicity					
Urban	2.6	—	0.9	—	1.7
Suburban	3.0	—	1.7	—	1.7
Rural	3.4	—	2.7	—	2.0

See notes at end of table.

Table 25. Percentage of public high school graduates concentrating in mechanics and repair, by selected characteristics, including special and protected populations status: Various years, 1982–98 —Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	1.7	1.5
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	1.9	1.9
Low (5 percent or less in NSLP)	—	—	—	0.7	1.6
Not reported	—	—	—	1.6	1.7

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Mechanics and repair concentrators earned 3.0 or more credits in the mechanics and repair program area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 26. Percentage of public high school graduates concentrating in precision production, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	8.0	5.9	5.1	4.2	4.9
Race/ethnicity					
American Indian/Alaska Native	24.9	9.9	13.3	1.9	4.9
Asian/Pacific Islander	7.0	4.8	8.2	2.1	3.2
Black, non-Hispanic	6.7	4.1	3.2	2.9	3.1
Hispanic	10.3	4.8	4.2	3.6	4.6
White, non-Hispanic	7.5	6.5	5.2	4.6	5.4
Sex					
Male	15.1	10.7	8.9	7.6	8.9
Female	1.3	1.6	1.4	0.8	1.3
Disability status (grade 12)					
Has disability	8.6	10.5	—	8.3	5.9
No indicated disability	7.9	5.8	—	4.0	4.9
English proficiency (grade 12)					
Limited	—	‡	—	0.9	2.1
Proficient	—	6.0	—	4.2	4.9
Grade-point average (GPA)					
High (greater than 3.5)	2.0	1.6	1.9	1.4	2.3
Mid-level (2.0 to 3.5)	8.6	5.7	5.1	4.4	5.1
Low (less than 2.0)	8.8	9.4	7.7	5.5	9.1
Academic coursework completed					
All high[1]	5.4	1.4	1.8	1.3	2.6
Mid-level or mixed[2]	7.8	5.9	5.3	4.5	5.2
All low[3]	12.6	16.3	12.1	9.2	6.4
Grade 9 mathematics					
High (geometry or higher)[4]	4.2	2.6	2.5	2.2	2.9
Mid-level (prealgebra or algebra 1)	7.1	5.3	4.6	3.9	5.2
Low (no or low mathematics)[5]	9.9	8.7	7.8	6.2	6.3
School urbanicity					
Urban	7.9	4.4	4.4	2.6	3.9
Suburban	8.3	6.1	4.9	3.5	5.1
Rural	7.5	6.2	5.8	5.2	5.6

See notes at end of table.

Table 26. Percentage of public high school graduates concentrating in precision production, by selected characteristics, including special and protected populations status: Various years, 1982–98 —Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	4.4	4.8	5.9
Middle (greater than 5 to 50 percent in NSLP)	—	—	5.3	4.2	5.3
Low (5 percent or less in NSLP)	—	—	4.5	4.4	2.3
Not reported	—	—	6.6	3.6	5.7

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Precision production concentrators earned 3.0 or more credits in the broad precision production program area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 27. **Percentage of public high school graduates concentrating in print production, by selected characteristics, including special and protected populations status: Various years, 1982–98**

	1982	1990	1992	1994	1998
Total	2.0	1.8	2.2	1.8	2.0
Race/ethnicity					
American Indian/Alaska Native	8.1	4.6	2.8	‡	1.1
Asian/Pacific Islander	3.4	2.0	5.2	0.8	1.6
Black, non-Hispanic	2.8	1.0	1.2	1.1	1.3
Hispanic	1.9	1.1	1.6	1.2	1.3
White, non-Hispanic	1.8	2.0	2.2	1.9	2.3
Sex					
Male	3.3	3.1	3.3	3.0	3.3
Female	0.8	0.6	1.0	0.6	0.8
Disability status (grade 12)					
Has disability	1.8	2.4	—	2.5	1.8
No indicated disability	2.0	1.8	—	1.7	2.0
English proficiency (grade 12)					
Limited	—	‡	—	0.6	1.1
Proficient	—	1.8	—	1.8	2.0
Grade-point average (GPA)					
High (greater than 3.5)	1.1	1.1	0.9	0.9	1.4
Mid-level (2.0 to 3.5)	2.2	2.0	2.2	1.9	2.0
Low (less than 2.0)	1.7	1.1	3.0	1.8	3.0
Academic coursework completed					
All high[1]	0.1	1.1	1.3	1.1	1.8
Mid-level or mixed[2]	2.1	1.9	2.3	1.9	2.0
All low[3]	‡	1.5	1.0	1.3	1.7
Grade 9 mathematics					
High (geometry or higher)[4]	1.1	1.3	1.3	1.4	1.7
Mid-level (prealgebra or algebra 1)	2.4	1.9	2.3	1.9	2.2
Low (no or low mathematics)[5]	1.6	1.6	2.4	1.7	1.6
School urbanicity					
Urban	2.5	—	2.1	—	1.6
Suburban	2.2	—	2.1	—	1.9
Rural	1.3	—	2.3	—	2.4

See notes at end of table.

Table 27. Percentage of public high school graduates concentrating in print production, by selected characteristics, including special and protected populations status: Various years, 1982–98 —Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	1.4	3.1
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	1.8	2.2
Low (5 percent or less in NSLP)	—	—	—	2.4	0.8
Not reported	—	—	—	1.2	1.8

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Print production concentrators earned 3.0 or more credits in the print production program area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 28. Percentage of public high school graduates concentrating in materials production, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	3.0	1.8	1.5	1.1	1.3
Race/ethnicity					
American Indian/Alaska Native	1.8	‡	4.6	‡	2.7
Asian/Pacific Islander	1.4	0.8	0.9	0.6	0.6
Black, non-Hispanic	1.3	1.0	1.2	0.7	0.4
Hispanic	4.8	1.0	1.0	0.9	1.4
White, non-Hispanic	3.1	2.1	1.5	1.3	1.5
Sex					
Male	6.3	3.6	2.8	2.3	2.6
Female	0.1	0.2	0.1	0.1	‡
Disability status (grade 12)					
Has disability	3.5	4.9	—	3.1	2.5
No indicated disability	3.0	1.7	—	1.1	1.3
English proficiency (grade 12)					
Limited	—	‡	—	‡	‡
Proficient	—	1.8	—	1.2	1.3
Grade-point average (GPA)					
High (greater than 3.5)	0.5	‡	0.6	0.1	0.2
Mid-level (2.0 to 3.5)	3.2	1.6	1.5	1.1	1.4
Low (less than 2.0)	3.8	3.9	1.8	2.2	3.0
Academic coursework completed					
All high[1]	2.1	‡	0.1	‡	0.3
Mid-level or mixed[2]	2.9	1.6	1.5	1.2	1.4
All low[3]	8.2	8.8	6.5	4.2	3.9
Grade 9 mathematics					
High (geometry or higher)[4]	1.0	0.5	0.4	0.3	0.5
Mid-level (prealgebra or algebra 1)	2.3	1.3	1.0	0.8	1.3
Low (no or low mathematics)[5]	4.5	3.4	3.2	2.7	2.6
School urbanicity					
Urban	3.0	—	0.9	—	1.0
Suburban	2.5	—	1.4	—	1.2
Rural	3.8	—	1.9	—	1.7

See notes at end of table.

Table 28. Percentage of public high school graduates concentrating in materials production, by selected characteristics, including special and protected populations status: Various years, 1982–98 —Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	2.0	1.1
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	1.2	1.4
Low (5 percent or less in NSLP)	—	—	—	0.6	0.6
Not reported	—	—	—	1.1	2.0

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Materials production concentrators earned 3.0 or more credits in the materials production program area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 29. Percentage of public high school graduates concentrating in other precision production, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	0.4	0.4	0.2	0.2	0.2
Race/ethnicity					
American Indian/Alaska Native	0.1	‡	2.2	‡	‡
Asian/Pacific Islander	0.8	‡	0.2	‡	0.1
Black, non-Hispanic	1.2	0.4	0.1	0.2	0.3
Hispanic	0.8	‡	0.3	0.2	‡
White, non-Hispanic	0.2	0.5	0.2	0.2	0.3
Sex					
Male	0.8	0.6	0.3	0.3	0.4
Female	0.1	0.2	0.1	‡	0.1
Disability status (grade 12)					
Has disability	0.2	‡	—	0.8	‡
No indicated disability	0.4	0.4	—	0.1	0.2
English proficiency (grade 12)					
Limited	—	‡	—	‡	‡
Proficient	—	0.4	—	0.2	0.2
Grade-point average (GPA)					
High (greater than 3.5)	‡	‡	0.1	‡	0.3
Mid-level (2.0 to 3.5)	0.4	0.4	0.2	0.2	0.2
Low (less than 2.0)	0.5	0.5	0.4	0.2	0.4
Academic coursework completed					
All high[1]	‡	‡	0.1	‡	0.2
Mid-level or mixed[2]	0.4	0.3	0.2	0.2	0.3
All low[3]	0.9	2.8	‡	0.4	‡
Grade 9 mathematics					
High (geometry or higher)[4]	‡	‡	0.2	‡	0.1
Mid-level (prealgebra or algebra 1)	0.3	0.3	0.2	0.1	0.2
Low (no or low mathematics)[5]	0.6	0.7	0.3	0.3	0.4
School urbanicity					
Urban	0.4	—	0.3	—	0.2
Suburban	0.6	—	0.1	—	0.3
Rural	0.1	—	0.3	—	0.2

See notes at end of table.

Table 29. Percentage of public high school graduates concentrating in other precision production, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	‡	‡
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	0.2	0.3
Low (5 percent or less in NSLP)	—	—	—	0.1	‡
Not reported	—	—	—	0.1	0.3

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Other precision production concentrators earned 3.0 or more credits in the "other" precision production program area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 30. Percentage of public high school graduates concentrating in transportation, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	‡	0.1	‡	0.1	0.1
Race/ethnicity					
American Indian/Alaska Native	‡	‡	‡	‡	‡
Asian/Pacific Islander	0.4	‡	‡	‡	‡
Black, non-Hispanic	0.1	‡	‡	0.2	‡
Hispanic	‡	‡	‡	0.1	0.2
White, non-Hispanic	‡	0.1	‡	0.1	0.1
Sex					
Male	0.1	0.2	‡	0.2	0.1
Female	‡	‡	‡	‡	‡
Disability status (grade 12)					
Has disability	‡	‡	—	‡	‡
No indicated disability	‡	0.1	—	0.1	0.1
English proficiency (grade 12)					
Limited	—	‡	—	‡	‡
Proficient	—	0.1	—	0.1	0.1
Grade-point average (GPA)					
High (greater than 3.5)	0.1	‡	‡	‡	‡
Mid-level (2.0 to 3.5)	‡	0.1	‡	0.1	0.1
Low (less than 2.0)	‡	‡	‡	0.1	‡
Academic coursework completed					
All high[1]	0.5	‡	‡	‡	‡
Mid-level or mixed[2]	‡	0.1	‡	0.1	0.1
All low[3]	‡	‡	‡	0.7	‡
Grade 9 mathematics					
High (geometry or higher)[4]	‡	‡	‡	‡	‡
Mid-level (prealgebra or algebra 1)	‡	0.1	‡	0.1	0.1
Low (no or low mathematics)[5]	0.1	0.2	‡	0.2	0.1
School urbanicity					
Urban	0.1	—	‡	—	‡
Suburban	‡	—	‡	—	0.1
Rural	0.1	—	‡	—	0.1

See notes at end of table.

Table 30. Percentage of public high school graduates concentrating in transportation, by selected characteristics, including special and protected populations status: Various years, 1982–98 —Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	0.3	‡
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	0.1	0.1
Low (5 percent or less in NSLP)	—	—	—	‡	‡
Not reported	—	—	—	0.1	‡

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Transportation concentrators earned 3.0 or more credits in the transportation program area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 31. Percentage of public high school graduates concentrating in technology program areas, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	0.5	0.8	1.3	0.9	2.2
Race/ethnicity					
American Indian/Alaska Native	‡	4.3	‡	‡	2.3
Asian/Pacific Islander	1.1	0.6	0.3	0.8	2.1
Black, non-Hispanic	0.4	0.8	0.5	0.7	1.7
Hispanic	0.2	0.6	1.4	0.7	1.8
White, non-Hispanic	0.5	0.9	1.4	0.9	2.4
Sex					
Male	0.4	0.9	1.4	0.9	2.4
Female	0.5	0.7	1.1	0.8	2.2
Disability status (grade 12)					
Has disability	0.4	‡	—	1.1	1.5
No indicated disability	0.5	0.8	—	0.9	2.3
English proficiency (grade 12)					
Limited	—	‡	—	‡	‡
Proficient	—	0.8	—	0.9	2.3
Grade-point average (GPA)					
High (greater than 3.5)	0.1	1.3	2.1	1.6	3.0
Mid-level (2.0 to 3.5)	0.5	0.9	1.1	0.8	2.2
Low (less than 2.0)	0.6	0.4	1.2	0.5	1.3
Academic coursework completed					
All high[1]	‡	1.5	2.0	1.2	3.0
Mid-level or mixed[2]	0.5	0.8	1.2	0.8	2.2
All low[3]	0.6	‡	0.3	0.6	‡
Grade 9 mathematics					
High (geometry or higher)[4]	0.3	1.9	1.8	1.6	3.1
Mid-level (prealgebra or algebra 1)	0.4	0.8	1.3	0.8	2.1
Low (no or low mathematics)[5]	0.6	0.4	0.8	0.5	1.9
School urbanicity					
Urban	0.4	—	1.7	—	1.5
Suburban	0.7	—	1.2	—	2.5
Rural	0.3	—	1.0	—	2.5

See notes at end of table.

Table 31. Percentage of public high school graduates concentrating in technology program areas, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	1.1	1.9
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	0.9	2.4
Low (5 percent or less in NSLP)	—	—	—	0.9	1.7
Not reported	—	—	—	0.5	2.4

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Technology concentrators earned 3.0 or more credits in the broad technology and communications program area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 32. **Percentage of public high school graduates concentrating in computer technology, by selected characteristics, including special and protected populations status: Various years, 1982–98**

	1982	1990	1992	1994	1998
Total	0.3	0.3	0.4	0.3	0.6
Race/ethnicity					
American Indian/Alaska Native	‡	‡	‡	‡	1.1
Asian/Pacific Islander	1.1	0.5	0.2	‡	0.5
Black, non-Hispanic	0.3	0.4	0.4	0.2	0.6
Hispanic	‡	‡	0.9	0.1	0.4
White, non-Hispanic	0.3	0.3	0.4	0.3	0.7
Sex					
Male	0.3	0.4	0.5	0.4	0.7
Female	0.2	0.2	0.3	0.2	0.6
Disability status (grade 12)					
Has disability	0.2	‡	—	0.5	0.7
No indicated disability	0.3	0.3	—	0.3	0.6
English proficiency (grade 12)					
Limited	—	‡	—	‡	‡
Proficient	—	0.3	—	0.3	0.6
Grade-point average (GPA)					
High (greater than 3.5)	0.1	0.3	0.6	0.3	0.8
Mid-level (2.0 to 3.5)	0.3	0.3	0.4	0.3	0.6
Low (less than 2.0)	0.3	0.2	0.4	0.3	0.6
Academic coursework completed					
All high[1]	‡	0.5	0.4	0.3	0.7
Mid-level or mixed[2]	0.3	0.3	0.4	0.3	0.7
All low[3]	0.1	‡	0.1	‡	‡
Grade 9 mathematics					
High (geometry or higher)[4]	0.2	0.7	0.6	0.5	1.1
Mid-level (prealgebra or algebra 1)	0.2	0.3	0.3	0.3	0.5
Low (no or low mathematics)[5]	0.3	0.2	0.5	0.2	0.7
School urbanicity					
Urban	0.1	—	0.6	—	0.3
Suburban	0.4	—	0.3	—	0.6
Rural	0.2	—	0.3	—	0.9

See notes at end of table.

Table 32. Percentage of public high school graduates concentrating in computer technology, by selected characteristics, including special and protected populations status: Various years, 1982–98 —Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	0.3	0.8
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	0.2	0.8
Low (5 percent or less in NSLP)	—	—	—	0.5	0.2
Not reported	—	—	—	0.2	0.3

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Computer technology concentrators earned 3.0 or more credits in the computer technology program area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 33. Percentage of public high school graduates concentrating in communications technology, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	0.1	0.3	0.3	0.3	0.8
Race/ethnicity					
American Indian/Alaska Native	‡	‡	‡	‡	‡
Asian/Pacific Islander	‡	‡	‡	0.3	0.8
Black, non-Hispanic	‡	0.1	0.1	0.3	0.4
Hispanic	0.1	0.2	0.1	0.3	0.5
White, non-Hispanic	0.1	0.3	0.3	0.3	1.0
Sex					
Male	0.2	0.2	0.2	0.3	0.7
Female	0.1	0.3	0.3	0.4	1.0
Disability status (grade 12)					
Has disability	‡	‡	—	0.4	0.5
No indicated disability	0.1	0.3	—	0.3	0.9
English proficiency (grade 12)					
Limited	—	‡	—	‡	‡
Proficient	—	0.3	—	0.3	0.9
Grade-point average (GPA)					
High (greater than 3.5)	0.1	0.3	0.4	0.8	1.7
Mid-level (2.0 to 3.5)	0.1	0.3	0.3	0.3	0.7
Low (less than 2.0)	0.1	‡	‡	0.1	‡
Academic coursework completed					
All high[1]	‡	0.3	0.5	0.6	1.7
Mid-level or mixed[2]	0.1	0.3	0.2	0.3	0.7
All low[3]	0.5	‡	0.2	‡	‡
Grade 9 mathematics					
High (geometry or higher)[4]	0.2	0.3	0.4	0.6	1.3
Mid-level (prealgebra or algebra 1)	0.1	0.3	0.3	0.3	0.8
Low (no or low mathematics)[5]	0.1	0.1	0.1	0.2	0.5
School urbanicity					
Urban	0.1	—	0.3	—	0.6
Suburban	0.2	—	0.3	—	1.2
Rural	‡	—	0.2	—	0.6

See notes at end of table.

Table 33. Percentage of public high school graduates concentrating in communications technology, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	0.2	0.7
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	0.4	0.7
Low (5 percent or less in NSLP)	—	—	—	0.4	1.2
Not reported	—	—	—	0.2	1.0

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Communications technology concentrators earned 3.0 or more credits in the communications technology program area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 34. Percentage of public high school graduates concentrating in other technologies, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	0.1	‡	0.2	‡	0.2
Race/ethnicity					
American Indian/Alaska Native	‡	‡	‡	‡	‡
Asian/Pacific Islander	‡	‡	‡	‡	0.4
Black, non-Hispanic	‡	‡	‡	0.1	‡
Hispanic	0.1	‡	0.2	‡	0.2
White, non-Hispanic	0.1	#	0.2	‡	0.1
Sex					
Male	0.2	0.1	0.3	0.1	0.3
Female	‡	‡	‡	‡	‡
Disability status (grade 12)					
Has disability	0.2	‡	—	‡	‡
No indicated disability	0.1	‡	—	‡	0.2
English proficiency (grade 12)					
Limited	—	‡	—	‡	‡
Proficient	—	‡	—	‡	0.2
Grade-point average (GPA)					
High (greater than 3.5)	‡	‡	0.5	‡	‡
Mid-level (2.0 to 3.5)	0.1	#	0.1	‡	0.2
Low (less than 2.0)	0.2	‡	0.2	‡	‡
Academic coursework completed					
All high[1]	‡	‡	0.6	‡	‡
Mid-level or mixed[2]	0.1	0.1	0.1	‡	0.2
All low[3]	‡	‡	‡	‡	‡
Grade 9 mathematics					
High (geometry or higher)[4]	‡	‡	0.4	‡	0.1
Mid-level (prealgebra or algebra 1)	0.1	0.1	0.2	‡	0.2
Low (no or low mathematics)[5]	0.1	‡	0.1	‡	‡
School urbanicity					
Urban	#	—	0.3	—	0.2
Suburban	0.1	—	0.2	—	0.2
Rural	0.1	—	‡	—	‡

See notes at end of table.

Table 34. Percentage of public high school graduates concentrating in other technologies, by selected characteristics, including special and protected populations status: Various years, 1982–98 —Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	0.2	‡
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	‡	0.1
Low (5 percent or less in NSLP)	—	—	—	‡	0.3
Not reported	—	—	—	‡	0.3

—Not available.

#Rounds to zero.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Other technologies concentrators earned 3.0 or more credits in the "other" technologies program area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 35. Percentage of public high school graduates concentrating in food service and hospitality, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	0.2	0.5	0.4	0.4	0.5
Race/ethnicity					
American Indian/Alaska Native	1.0	‡	2.7	‡	‡
Asian/Pacific Islander	‡	‡	‡	‡	0.3
Black, non-Hispanic	0.3	1.3	1.5	1.0	1.4
Hispanic	0.3	0.4	0.6	0.4	0.2
White, non-Hispanic	0.2	0.3	0.2	0.2	0.3
Sex					
Male	0.2	0.5	0.3	0.4	0.4
Female	0.3	0.4	0.4	0.4	0.5
Disability status (grade 12)					
Has disability	0.8	2.7	—	2.0	0.8
No indicated disability	0.2	0.4	—	0.3	0.5
English proficiency (grade 12)					
Limited	—	‡	—	‡	‡
Proficient	—	0.5	—	0.4	0.5
Grade-point average (GPA)					
High (greater than 3.5)	‡	‡	0.0	0.1	‡
Mid-level (2.0 to 3.5)	0.3	0.4	0.4	0.3	0.5
Low (less than 2.0)	0.2	1.0	0.7	0.7	1.3
Academic coursework completed					
All high[1]	‡	‡	‡	‡	0.1
Mid-level or mixed[2]	0.2	0.4	0.3	0.3	0.4
All low[3]	1.2	2.2	1.4	2.5	2.7
Grade 9 mathematics					
High (geometry or higher)[4]	‡	‡	‡	‡	0.2
Mid-level (prealgebra or algebra 1)	0.2	0.2	0.1	0.2	0.5
Low (no or low mathematics)[5]	0.4	1.2	1.2	1.0	0.8
School urbanicity					
Urban	0.4	—	0.4	—	0.7
Suburban	0.2	—	0.4	—	0.5
Rural	0.2	—	0.3	—	0.3

See notes at end of table.

Table 35. Percentage of public high school graduates concentrating in food service and hospitality, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	0.3	0.1
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	0.4	0.5
Low (5 percent or less in NSLP)	—	—	—	0.2	0.3
Not reported	—	—	—	0.3	0.6

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Food service and hospitality concentrators earned 3.0 or more credits in the food service and hospitality program area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 36. Percentage of public high school graduates concentrating in child care and education, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	0.2	0.3	0.4	0.6	0.6
Race/ethnicity					
American Indian/Alaska Native	0.5	‡	‡	‡	‡
Asian/Pacific Islander	‡	‡	‡	‡	0.1
Black, non-Hispanic	0.4	0.4	0.6	1.5	0.6
Hispanic	0.2	‡	0.1	0.5	0.5
White, non-Hispanic	0.2	0.3	0.4	0.5	0.6
Sex					
Male	0.1	‡	0.1	0.1	0.1
Female	0.3	0.5	0.6	1.1	1.0
Disability status (grade 12)					
Has disability	0.5	0.7	—	0.8	0.7
No indicated disability	0.2	0.3	—	0.6	0.6
English proficiency (grade 12)					
Limited	—	‡	—	‡	‡
Proficient	—	0.3	—	0.6	0.6
Grade-point average (GPA)					
High (greater than 3.5)	‡	‡	0.2	0.1	0.1
Mid-level (2.0 to 3.5)	0.2	0.3	0.3	0.6	0.7
Low (less than 2.0)	0.2	0.4	0.7	1.0	0.7
Academic coursework completed					
All high[1]	‡	‡	‡	0.1	0.2
Mid-level or mixed[2]	0.2	0.3	0.3	0.6	0.7
All low[3]	0.7	0.3	2.0	2.3	‡
Grade 9 mathematics					
High (geometry or higher)[4]	‡	0.1	0.1	0.2	0.3
Mid-level (prealgebra or algebra 1)	0.2	0.2	0.3	0.5	0.7
Low (no or low mathematics)[5]	0.3	0.6	0.6	0.9	0.6
School urbanicity					
Urban	0.3	—	0.2	—	0.8
Suburban	0.2	—	0.3	—	0.6
Rural	0.2	—	0.5	—	0.4

See notes at end of table.

Table 36. Percentage of public high school graduates concentrating in child care and education, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	1.0	0.3
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	0.5	0.6
Low (5 percent or less in NSLP)	—	—	—	0.4	0.6
Not reported	—	—	—	0.7	0.8

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Child care and education concentrators earned 3.0 or more credits in the child care and education program area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 37. **Percentage of public high school graduates concentrating in personal and other services, by selected characteristics, including special and protected populations status: Various years, 1982–98**

	1982	1990	1992	1994	1998
Total	1.3	1.3	1.3	1.1	0.8
Race/ethnicity					
American Indian/Alaska Native	0.4	‡	1.6	‡	‡
Asian/Pacific Islander	0.2	‡	0.1	0.3	‡
Black, non-Hispanic	1.2	2.2	3.4	2.3	1.3
Hispanic	1.5	2.7	1.8	2.5	1.3
White, non-Hispanic	1.3	1.0	1.0	0.8	0.7
Sex					
Male	0.3	0.2	0.4	0.3	0.2
Female	2.2	2.3	2.2	1.8	1.4
Disability status (grade 12)					
Has disability	1.1	2.4	—	1.5	2.4
No indicated disability	1.3	1.3	—	1.1	0.8
English proficiency (grade 12)					
Limited	—	3.9	—	2.4	‡
Proficient	—	1.3	—	1.1	0.8
Grade-point average (GPA)					
High (greater than 3.5)	0.3	0.1	‡	0.1	0.3
Mid-level (2.0 to 3.5)	1.3	1.4	1.4	1.2	0.9
Low (less than 2.0)	1.8	1.7	2.1	1.3	1.5
Academic coursework completed					
All high[1]	‡	‡	‡	0.2	0.4
Mid-level or mixed[2]	1.3	1.4	1.4	1.2	0.8
All low[3]	1.5	2.7	3.9	1.5	2.3
Grade 9 mathematics					
High (geometry or higher)[4]	0.6	0.3	0.4	0.5	0.2
Mid-level (prealgebra or algebra 1)	1.4	1.0	1.2	0.9	0.9
Low (no or low mathematics)[5]	1.2	2.3	2.1	2.0	1.2
School urbanicity					
Urban	2.4	—	1.2	—	1.1
Suburban	1.2	—	1.5	—	0.8
Rural	0.8	—	1.2	—	0.6

See notes at end of table.

Table 37. Percentage of public high school graduates concentrating in personal and other services, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	1.5	1.1
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	1.3	0.7
Low (5 percent or less in NSLP)	—	—	—	0.4	0.7
Not reported	—	—	—	0.9	1.0

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Personal and other services concentrators earned 3.0 or more credits in the personal and other services program area. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 38. Percentage distribution of public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	100.0	100.0	100.0	100.0	100.0
Race/ethnicity					
American Indian/Alaska Native	1.2	0.5	1.0	0.8	0.5
Asian/Pacific Islander	1.5	3.6	4.1	3.6	3.5
Black, non-Hispanic	11.4	14.3	11.7	12.6	13.6
Hispanic	11.9	8.0	9.6	8.0	11.4
White, non-Hispanic	74.1	73.6	73.6	75.0	70.8
Other	—	—	—	—	0.2
Sex					
Male	48.2	47.7	49.4	49.0	47.8
Female	51.8	52.3	50.6	51.0	52.2
Disability status (grade 12)					
Has disability	8.7	2.6	—	3.7	2.8
No indicated disability	91.3	97.4	—	96.3	97.2
English proficiency (grade 12)					
Limited	—	0.5	—	0.9	0.7
Proficient	—	99.5	—	99.1	99.3
Grade-point average (GPA)					
High (greater than 3.5)	10.0	10.3	10.7	13.9	17.4
Mid-level (2.0 to 3.5)	69.5	72.2	75.7	72.3	75.5
Low (less than 2.0)	20.5	17.5	13.6	13.8	7.1
Academic coursework completed					
All high[1]	4.4	11.0	14.2	15.0	14.9
Mid-level or mixed[2]	92.3	84.3	82.3	82.5	82.8
All low[3]	3.3	4.7	3.5	2.5	2.2
Grade 9 mathematics					
High (geometry or higher)[4]	7.9	10.6	12.9	14.9	20.4
Mid-level (prealgebra or algebra 1)	52.7	61.7	63.0	62.4	62.5
Low (no or low mathematics)[5]	39.4	27.6	24.2	22.8	17.1
School urbanicity					
Urban	19.2	—	22.2	—	28.4
Suburban	48.4	—	44.2	—	39.3
Rural	32.4	—	33.5	—	32.3

See notes at end of table.

Table 38. Percentage distribution of public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	8.4	9.2
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	58.6	59.8
Low (5 percent or less in NSLP)	—	—	—	15.9	16.2
Not reported	—	—	—	17.2	14.8

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: NSLP is the National School Lunch Program. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 39. Percentage distribution of occupational concentrators, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	100.0	100.0	100.0	100.0	100.0
Race/ethnicity					
American Indian/Alaska Native	1.6	0.7	1.4	0.7	0.5
Asian/Pacific Islander	0.8	2.1	3.3	2.0	2.4
Black, non-Hispanic	11.1	14.1	11.7	14.4	14.8
Hispanic	13.4	8.0	9.3	7.9	10.5
White, non-Hispanic	73.2	75.2	74.3	75.0	71.7
Sex					
Male	55.8	55.5	57.6	55.4	58.6
Female	44.2	44.5	42.4	44.6	41.4
Disability status (grade 12)					
Has disability	8.2	3.9	—	6.0	4.2
No indicated disability	91.8	96.1	—	94.0	95.8
English proficiency (grade 12)					
Limited	—	0.2	—	0.6	0.2
Proficient	—	99.8	—	99.4	99.8
Grade-point average (GPA)					
High (greater than 3.5)	5.3	4.1	4.7	7.0	10.5
Mid-level (2.0 to 3.5)	71.0	72.7	76.7	75.8	79.5
Low (less than 2.0)	23.7	23.2	18.6	17.3	10.0
Academic coursework completed					
All high[1]	0.7	2.9	4.7	5.1	8.5
Mid-level or mixed[2]	94.7	88.5	87.8	90.5	87.8
All low[3]	4.5	8.5	7.6	4.3	3.7
Grade 9 mathematics					
High (geometry or higher)[4]	4.2	4.6	6.2	7.0	14.3
Mid-level (prealgebra or algebra 1)	47.6	56.3	58.2	59.9	65.5
Low (no or low mathematics)[5]	48.2	39.1	35.5	33.1	20.2
School urbanicity					
Urban	17.6	—	19.1	—	26.2
Suburban	45.6	—	38.8	—	33.8
Rural	36.8	—	42.1	—	40.1

See notes at end of table.

Table 39. Percentage distribution of occupational concentrators, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	9.9	10.7
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	62.2	64.2
Low (5 percent or less in NSLP)	—	—	—	10.6	10.2
Not reported	—	—	—	17.3	14.9

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Occupational concentrators earned 3.0 or more credits in one of the following 10 broad occupational program areas: agriculture, business, marketing, health care, protective services, technology, trade and industry, food service and hospitality, child care and education, and personal and other services. NSLP is the National School Lunch Program. Percentages may not add to 100.0 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 40. Percentage distribution of public high school graduates earning 3.0 or more occupational credits, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	100.0	100.0	100.0	100.0	100.0
Race/ethnicity					
American Indian/Alaska Native	1.5	0.6	1.4	0.8	0.5
Asian/Pacific Islander	1.0	2.6	3.7	2.6	2.7
Black, non-Hispanic	10.9	14.5	11.6	13.8	14.7
Hispanic	13.4	8.0	10.0	8.1	11.5
White, non-Hispanic	73.1	74.4	73.3	74.6	70.5
Sex					
Male	54.9	54.7	56.1	54.3	54.6
Female	45.1	45.3	43.9	45.7	45.4
Disability status (grade 12)					
Has disability	8.3	3.5	—	5.1	3.8
No indicated disability	91.7	96.5	—	94.9	96.2
English proficiency (grade 12)					
Limited	—	0.2	—	0.6	0.4
Proficient	—	99.8	—	99.4	99.6
Grade-point average (GPA)					
High (greater than 3.5)	5.9	5.2	5.7	7.8	11.4
Mid-level (2.0 to 3.5)	70.3	72.3	76.4	74.3	79.4
Low (less than 2.0)	23.8	22.5	17.9	17.9	9.2
Academic coursework completed					
All high[1]	1.2	4.1	6.2	6.6	9.0
Mid-level or mixed[2]	94.4	88.6	87.7	89.5	87.6
All low[3]	4.4	7.3	6.1	3.9	3.3
Grade 9 mathematics					
High (geometry or higher)[4]	4.9	5.5	7.4	29.8	15.5
Mid-level (prealgebra or algebra 1)	49.1	58.8	61.0	62.1	65.2
Low (no or low mathematics)[5]	46.0	35.7	31.6	8.2	19.3
School urbanicity					
Urban	17.7	—	20.6	—	24.8
Suburban	46.1	—	39.0	—	35.5
Rural	36.2	—	40.4	—	39.7

See notes at end of table.

Table 40. Percentage distribution of public high school graduates earning 3.0 or more occupational credits, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	9.0	11.3
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	61.6	62.4
Low (5 percent or less in NSLP)	—	—	—	11.3	11.1
Not reported	—	—	—	18.1	15.2

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: NSLP is the National School Lunch Program. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 41. Average number of computer-related credits earned by public high school graduates in computer-related areas, by selected characteristics, including special and protected populations status: 1998

		Basic type-			Computer technology						
	Total	writing/key-boarding	Technology education	Business services	Total	Appli-cations	Program-ming	Data pro-cessing	Science/ systems	Mathe-matics	Drafting/ graphics
Total	1.05	0.29	0.06	0.33	0.31	0.16	0.04	0.01	0.09	0.01	0.06
Race/ethnicity											
American Indian/ Alaska Native	0.95	0.25	0.04	0.28	0.34	0.16	0.05	0.02	0.09	0.02	0.04
Asian/Pacific Islander	0.97	0.28	0.03	0.33	0.30	0.13	0.05	0.02	0.08	0.01	0.03
Black, non-Hispanic	1.20	0.34	0.09	0.40	0.34	0.19	0.04	0.01	0.08	0.02	0.04
Hispanic	1.06	0.33	0.05	0.32	0.33	0.16	0.05	0.01	0.10	0.02	0.04
White, non-Hispanic	1.02	0.28	0.06	0.32	0.30	0.15	0.04	0.01	0.09	0.01	0.06
Sex											
Male	1.05	0.26	0.10	0.29	0.32	0.15	0.06	0.01	0.09	0.01	0.09
Female	1.06	0.33	0.03	0.37	0.30	0.16	0.03	0.01	0.08	0.01	0.03
Disability status (grade 12)											
Has disability	0.86	0.23	0.07	0.27	0.25	0.13	0.02	0.03	0.07	0.01	0.03
No indicated disability	1.06	0.29	0.06	0.34	0.31	0.16	0.04	0.01	0.09	0.01	0.06
English proficiency (grade 12)											
Limited	0.99	0.35	0.08	0.27	0.27	0.11	0.04	‡	0.11	0.01	0.03
Proficient	1.05	0.29	0.06	0.33	0.31	0.16	0.04	0.01	0.09	0.01	0.06
Grade-point average (GPA)											
High (greater than 3.5)	0.99	0.28	0.03	0.30	0.33	0.18	0.05	0.01	0.08	0.02	0.04
Mid-level (2.0 to 3.5)	1.07	0.30	0.07	0.34	0.31	0.16	0.04	0.01	0.09	0.01	0.06
Low (less than 2.0)	0.94	0.24	0.06	0.31	0.23	0.11	0.02	0.01	0.09	0.01	0.09
Academic coursework completed											
All high[1]	1.01	0.25	0.02	0.37	0.33	0.16	0.06	0.01	0.09	0.02	0.04
Mid-level or mixed[2]	1.07	0.30	0.07	0.33	0.31	0.16	0.04	0.01	0.09	0.01	0.06
All low[3]	0.85	0.26	0.03	0.32	0.19	0.07	0.01	‡	0.10	0.01	0.04

See notes at end of table.

Table 41. Average number of computer-related credits earned by public high school graduates in computer-related areas, by selected characteristics, including special and protected populations status: 1998—Continued

					Computer technology						
	Total	Typing/key-boarding	Technology education	Business services	Total	Appli-cations	Program-ming	Data pro-cessing	Science/ systems	Mathe-matics	Drafting/ graphics
Grade 9 mathematics											
High (geometry or higher)[4]	1.01	0.26	0.04	0.31	0.35	0.18	0.06	0.01	0.08	0.03	0.04
Mid-level (prealgebra or algebra 1)	1.08	0.31	0.06	0.35	0.30	0.16	0.04	0.01	0.08	0.01	0.06
Low (no or low mathematics)[5]	0.98	0.28	0.07	0.31	0.27	0.11	0.03	0.01	0.11	0.01	0.05
School urbanicity											
Urban	0.91	0.25	0.05	0.29	0.28	0.13	0.04	0.02	0.08	0.02	0.05
Suburban	0.97	0.25	0.06	0.34	0.26	0.12	0.05	‡	0.08	0.01	0.06
Rural	1.27	0.38	0.07	0.37	0.39	0.23	0.04	0.01	0.10	0.01	0.06
School poverty level											
High (greater than 50 percent in NSLP)	1.27	0.34	0.07	0.41	0.40	0.21	0.04	0.05	0.09	0.01	0.04
Middle (greater than 5 to 50 percent in NSLP)	1.07	0.32	0.06	0.32	0.32	0.17	0.04	0.01	0.09	0.02	0.06
Low (5 percent or less in NSLP)	0.83	0.21	0.07	0.31	0.20	0.06	0.05	‡	0.09	‡	0.05
Not reported	1.07	0.26	0.05	0.38	0.31	0.17	0.04	0.01	0.09	‡	0.07

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: NSLP is the National School Lunch Program. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Transcript Study (HSTS), 1998.

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Table 42. Average number of computer-related credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982[1]	1990	1992	1994	1998
Total	†	1.04	1.03	1.04	1.05
Race/ethnicity					
American Indian/Alaska Native	†	1.06	0.91	1.21	0.95
Asian/Pacific Islander	†	1.00	1.03	0.99	0.97
Black, non-Hispanic	†	1.16	1.01	1.09	1.20
Hispanic	†	1.10	1.18	1.08	1.06
White, non-Hispanic	†	1.02	1.01	1.04	1.02
Sex					
Male	†	0.85	0.88	0.95	1.05
Female	†	1.20	1.17	1.12	1.06
Disability status (grade 12)					
Has disability	†	0.51	—	0.78	0.86
No indicated disability	†	1.05	—	1.05	1.06
English proficiency (grade 12)					
Limited	†	0.97	—	1.03	0.99
Proficient	†	1.04	—	1.04	1.05
Grade-point average (GPA)					
High (greater than 3.5)	†	1.08	1.09	1.05	0.99
Mid-level (2.0 to 3.5)	†	1.08	1.05	1.06	1.07
Low (less than 2.0)	†	0.84	0.87	0.89	0.94
Academic coursework completed					
All high[2]	†	1.03	1.02	0.96	1.01
Mid-level or mixed[3]	†	1.06	1.05	1.06	1.07
All low[4]	†	0.66	0.53	0.75	0.85
Grade 9 mathematics					
High (geometry or higher)[5]	†	1.05	1.08	1.01	1.01
Mid-level (prealgebra or algebra 1)	†	1.10	1.07	1.10	1.08
Low (no or low mathematics)[6]	†	0.89	0.88	0.87	0.98
School urbanicity					
Urban	†	—	1.00	—	0.91
Suburban	†	—	0.94	—	0.97
Rural	†	—	1.16	—	1.27

See notes at end of table.

Table 42. Average number of computer-related credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98 —Continued

	1982[1]	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	†	—	—	1.25	1.27
Middle (greater than 5 to 50 percent in NSLP)	†	—	—	1.05	1.07
Low (5 percent or less in NSLP)	†	—	—	0.93	0.83
Not reported	†	—	—	0.97	1.07

—Not available.

†Not applicable.

[1] In 1982, all basic typewriting/keyboarding courses were assumed not to be computer-related, while in subsequent years all of these courses were classified as computer-related. Therefore, 1982 estimates for basic typewriting/keyboarding, total computer-related general labor market preparation and total noncomputer-related general labor market preparation courses are not comparable with other years.

[2] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[3] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[4] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[5] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[6] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 43. Average number of typewriting/keyboarding credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982[1]	1990	1992	1994	1998
Total	†	0.45	0.34	0.37	0.29
Race/ethnicity					
American Indian/Alaska Native	†	0.40	0.31	0.41	0.25
Asian/Pacific Islander	†	0.40	0.26	0.26	0.28
Black, non-Hispanic	†	0.50	0.33	0.42	0.34
Hispanic	†	0.47	0.39	0.30	0.33
White, non-Hispanic	†	0.44	0.34	0.37	0.28
Sex					
Male	†	0.33	0.27	0.31	0.26
Female	†	0.55	0.41	0.43	0.33
Disability status (grade 12)					
Has disability	†	0.27	—	0.27	0.23
No indicated disability	†	0.45	—	0.37	0.29
English proficiency (grade 12)					
Limited	†	0.45	—	0.45	0.35
Proficient	†	0.45	—	0.37	0.29
Grade-point average (GPA)					
High (greater than 3.5)	†	0.43	0.34	0.36	0.28
Mid-level (2.0 to 3.5)	†	0.47	0.35	0.38	0.30
Low (less than 2.0)	†	0.38	0.31	0.34	0.24
Academic coursework completed					
All high[2]	†	0.37	0.29	0.30	0.25
Mid-level or mixed[3]	†	0.47	0.36	0.39	0.30
All low[4]	†	0.30	0.22	0.27	0.26
Grade 9 mathematics					
High (geometry or higher)[5]	†	0.40	0.30	0.31	0.26
Mid-level (prealgebra or algebra 1)	†	0.47	0.36	0.39	0.31
Low (no or low mathematics)[6]	†	0.41	0.31	0.34	0.28
School urbanicity					
Urban	†	—	0.29	—	0.25
Suburban	†	—	0.31	—	0.25
Rural	†	—	0.42	—	0.38

See notes at end of table.

Table 43. Average number of typewriting/keyboarding credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982[1]	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	†	—	—	0.41	0.34
Middle (greater than 5 to 50 percent in NSLP)	†	—	—	0.37	0.32
Low (5 percent or less in NSLP)	†	—	—	0.31	0.21
Not reported	†	—	—	0.38	0.26

—Not available.

[1] In 1982, all basic typewriting/keyboarding courses were assumed not to be computer-related, while in subsequent years all of these courses were classified as computer-related. Therefore, 1982 estimates for basic typewriting/keyboarding, total computer-related general labor market preparation and total noncomputer-related general labor market preparation courses are not comparable with other years.

[2] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[3] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[4] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[5] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[6] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 44. Average number of computer-related business services credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	0.01	0.28	0.29	0.38	0.33
Race/ethnicity					
American Indian/Alaska Native	0.01	0.34	0.25	0.46	0.28
Asian/Pacific Islander	0.01	0.22	0.30	0.36	0.33
Black, non-Hispanic	0.03	0.32	0.33	0.42	0.40
Hispanic	0.01	0.33	0.31	0.49	0.32
White, non-Hispanic	0.01	0.26	0.29	0.37	0.32
Sex					
Male	0.01	0.18	0.20	0.30	0.29
Female	0.02	0.37	0.38	0.46	0.37
Disability status (grade 12)					
Has disability	0.01	0.11	—	0.28	0.27
No indicated disability	0.01	0.28	—	0.38	0.34
English proficiency (grade 12)					
Limited	—	0.28	—	0.37	0.27
Proficient	—	0.28	—	0.38	0.33
Grade-point average (GPA)					
High (greater than 3.5)	0.02	0.22	0.25	0.37	0.30
Mid-level (2.0 to 3.5)	0.01	0.29	0.30	0.40	0.34
Low (less than 2.0)	0.01	0.25	0.27	0.31	0.31
Academic coursework completed					
All high[1]	0.03	0.19	0.26	0.34	0.37
Mid-level or mixed[2]	0.01	0.30	0.31	0.39	0.33
All low[3]	0.02	0.19	0.15	0.30	0.32
Grade 9 mathematics					
High (geometry or higher)[4]	0.01	0.21	0.26	0.34	0.31
Mid-level (prealgebra or algebra 1)	0.01	0.30	0.30	0.41	0.35
Low (no or low mathematics)[5]	0.01	0.26	0.29	0.33	0.31
School urbanicity					
Urban	0.02	—	0.26	—	0.29
Suburban	0.01	—	0.29	—	0.34
Rural	0.01	—	0.32	—	0.37

See notes at end of table.

Table 44. Average number of computer-related business services credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	0.45	0.41
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	0.39	0.32
Low (5 percent or less in NSLP)	—	—	—	0.30	0.31
Not reported	—	—	—	0.39	0.38

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 45. Average number of computer technology credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	0.11	0.30	0.37	0.23	0.31
Race/ethnicity					
American Indian/Alaska Native	0.05	0.31	0.35	0.26	0.34
Asian/Pacific Islander	0.18	0.38	0.45	0.35	0.30
Black, non-Hispanic	0.10	0.34	0.34	0.21	0.34
Hispanic	0.06	0.30	0.46	0.27	0.33
White, non-Hispanic	0.12	0.30	0.36	0.23	0.30
Sex					
Male	0.13	0.33	0.38	0.25	0.32
Female	0.09	0.28	0.37	0.21	0.30
Disability status (grade 12)					
Has disability	0.08	0.13	—	0.15	0.25
No indicated disability	0.12	0.31	—	0.24	0.31
English proficiency (grade 12)					
Limited	—	0.23	—	0.20	0.27
Proficient	—	0.30	—	0.23	0.31
Grade-point average (GPA)					
High (greater than 3.5)	0.20	0.43	0.48	0.30	0.33
Mid-level (2.0 to 3.5)	0.11	0.31	0.38	0.23	0.31
Low (less than 2.0)	0.07	0.20	0.26	0.17	0.23
Academic coursework completed					
All high[1]	0.04	0.46	0.45	0.30	0.33
Mid-level or mixed[2]	0.12	0.29	0.37	0.23	0.31
All low[3]	0.04	0.16	0.15	0.11	0.19
Grade 9 mathematics					
High (geometry or higher)[4]	0.19	0.44	0.49	0.33	0.35
Mid-level (prealgebra or algebra 1)	0.13	0.32	0.39	0.24	0.30
Low (no or low mathematics)[5]	0.07	0.22	0.26	0.15	0.27
School urbanicity					
Urban	0.12	—	0.44	—	0.28
Suburban	0.13	—	0.31	—	0.26
Rural	0.08	—	0.40	—	0.39

See notes at end of table.

Table 45. **Average number of computer technology credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued**

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	0.31	0.40
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	0.24	0.32
Low (5 percent or less in NSLP)	—	—	—	0.26	0.20
Not reported	—	—	—	0.16	0.31

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 46. Average number of total credits earned in high school by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	21.60	23.53	23.86	24.17	25.14
Race/ethnicity					
American Indian/Alaska Native	21.43	22.64	23.55	24.23	24.44
Asian/Pacific Islander	22.30	24.07	24.49	24.47	25.23
Black, non-Hispanic	21.18	23.40	23.48	23.59	24.83
Hispanic	21.27	23.83	23.84	24.06	25.09
White, non-Hispanic	21.71	23.54	23.89	24.33	25.21
Sex					
Male	21.43	23.35	23.69	23.99	24.94
Female	21.75	23.69	24.01	24.34	25.37
Disability status (grade 12)					
Has disability	21.32	22.81	—	24.00	24.73
No indicated disability	21.63	23.54	—	24.18	25.15
English proficiency (grade 12)					
Limited	—	24.22	—	24.63	25.00
Proficient	—	23.52	—	24.17	25.14
Grade-point average (GPA)					
High (greater than 3.5)	23.17	24.76	25.39	25.45	26.59
Mid-level (2.0 to 3.5)	21.80	23.70	23.94	24.27	25.02
Low (less than 2.0)	20.15	22.09	22.21	22.38	22.88
Academic coursework completed					
All high[1]	22.28	24.94	25.19	25.28	26.77
Mid-level or mixed[2]	21.63	23.39	23.67	24.00	24.90
All low[3]	20.30	22.65	22.98	23.32	23.62
Grade 9 mathematics					
High (geometry or higher)[4]	22.50	24.53	24.99	24.88	26.24
Mid-level (prealgebra or algebra 1)	21.97	23.68	24.02	24.32	25.12
Low (no or low mathematics)[5]	20.91	22.78	22.83	23.31	23.91
School urbanicity					
Urban	21.26	—	23.84	—	25.04
Suburban	21.68	—	23.73	—	24.97
Rural	21.67	—	24.03	—	25.44

See notes at end of table.

Table 46. Average number of total credits earned in high school by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	23.84	25.50
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	24.29	25.17
Low (5 percent or less in NSLP)	—	—	—	23.85	24.66
Not reported	—	—	—	24.22	25.32

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992: and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 47. Average number of core academic credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	11.87	13.57	13.88	14.21	14.51
Race/ethnicity					
American Indian/Alaska Native	11.51	12.94	13.49	13.90	13.63
Asian/Pacific Islander	12.88	14.68	14.61	15.27	15.33
Black, non-Hispanic	11.77	13.71	13.83	13.90	14.41
Hispanic	11.08	13.56	13.46	14.03	14.20
White, non-Hispanic	12.00	13.51	13.91	14.27	14.55
Sex					
Male	11.94	13.53	13.78	14.11	14.33
Female	11.79	13.61	13.98	14.31	14.70
Disability status (grade 12)					
Has disability	11.64	11.95	—	12.69	12.97
No indicated disability	11.89	13.61	—	14.27	14.56
English proficiency (grade 12)					
Limited	—	15.59	—	15.37	15.45
Proficient	—	13.56	—	14.20	14.51
Grade-point average (GPA)					
High (greater than 3.5)	13.82	15.22	15.47	15.84	15.96
Mid-level (2.0 to 3.5)	11.88	13.63	13.84	14.17	14.30
Low (less than 2.0)	10.87	12.36	12.86	12.82	13.20
Academic coursework completed					
All high[1]	13.74	15.61	15.72	16.05	16.31
Mid-level or mixed[2]	11.91	13.42	13.66	13.95	14.27
All low[3]	10.04	11.82	12.08	12.52	12.22
Grade 9 mathematics					
High (geometry or higher)[4]	13.39	14.93	15.32	15.46	15.66
Mid-level (prealgebra or algebra 1)	12.26	13.81	14.05	14.35	14.44
Low (no or low mathematics)[5]	11.03	12.51	12.67	13.03	13.39
School urbanicity					
Urban	11.89	—	13.88	—	14.70
Suburban	11.96	—	13.99	—	14.49
Rural	11.72	—	13.74	—	14.38

See notes at end of table.

Table 47. Average number of core academic credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98 —Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	13.98	14.49
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	14.24	14.48
Low (5 percent or less in NSLP)	—	—	—	14.48	14.49
Not reported	—	—	—	13.98	14.69

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: The core academic subjects include English, mathematics, science, and social studies. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 48. Average number of core academic credits earned by occupational concentrators, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	10.78	12.28	12.73	13.06	13.68
Race/ethnicity					
American Indian/Alaska Native	11.03	12.53	12.61	13.48	12.92
Asian/Pacific Islander	11.44	13.56	13.37	13.45	14.71
Black, non-Hispanic	10.95	12.68	13.08	13.00	14.09
Hispanic	10.38	12.54	12.62	13.22	13.75
White, non-Hispanic	10.83	12.15	12.66	13.08	13.56
Sex					
Male	10.77	12.22	12.69	12.93	13.44
Female	10.80	12.34	12.78	13.21	14.05
Disability status (grade 12)					
Has disability	10.93	11.29	—	12.25	12.44
No indicated disability	10.78	12.32	—	13.11	13.74
English proficiency (grade 12)					
Limited	—	‡	—	14.38	‡
Proficient	—	12.28	—	13.05	13.68
Grade-point average (GPA)					
High (greater than 3.5)	12.77	13.84	14.79	14.94	15.50
Mid-level (2.0 to 3.5)	10.79	12.40	12.71	13.07	13.59
Low (less than 2.0)	10.31	11.62	12.25	12.23	12.51
Academic coursework completed					
All high[1]	—	15.06	15.29	15.54	15.97
Mid-level or mixed[2]	10.82	12.30	12.69	12.98	13.57
All low[3]	9.70	11.28	11.89	12.35	11.74
Grade 9 mathematics					
High (geometry or higher)[4]	12.02	13.59	14.50	14.27	15.25
Mid-level (prealgebra or algebra 1)	11.07	12.53	12.99	13.33	13.69
Low (no or low mathematics)[5]	10.39	11.77	11.98	12.30	12.55
School urbanicity					
Urban	10.66	—	12.96	—	14.02
Suburban	10.95	—	12.64	—	13.65
Rural	10.63	—	12.69	—	13.49

See notes at end of table.

Table 48. Average number of core academic credits earned by occupational concentrators, by selected characteristics, including special and protected populations status: Various years, 1982–98 —Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	13.01	14.08
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	13.10	13.68
Low (5 percent or less in NSLP)	—	—	—	13.06	13.00
Not reported	—	—	—	12.91	13.87

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Occupational concentrators earned 3.0 or more credits in one of the following 10 broad occupational program areas: agriculture, business, marketing, health care, protective services, technology, trade and industry, food service and hospitality, child care and education, and personal and other services. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 49. Percentage distribution of public high school graduates who completed both an occupational concentration and college-preparatory coursework, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	100.0	100.0	100.0	100.0	100.0
Race/ethnicity					
American Indian/Alaska Native	0.6	0.5	0.2	0.1	0.2
Asian/Pacific Islander	5.4	4.8	7.6	2.9	2.7
Black, non-Hispanic	16.5	12.9	12.9	11.8	16.3
Hispanic	13.8	7.7	10.0	8.4	9.1
White, non-Hispanic	63.7	74.2	69.3	76.7	71.5
Sex					
Male	41.7	50.0	48.6	46.0	45.2
Female	58.3	50.0	51.4	54.0	54.8
Disability status (grade 12)					
Has disability	1.9	0.1	—	0.3	0.4
No indicated disability	98.1	99.9	—	99.7	99.6
English proficiency (grade 12)					
Limited	—	0.0	—	0.4	0.1
Proficient	—	100.0	—	99.6	99.9
Grade-point average (GPA)					
High (greater than 3.5)	18.0	16.6	17.4	21.9	27.0
Mid-level (2.0 to 3.5)	79.0	81.8	76.9	76.0	71.5
Low (less than 2.0)	3.1	1.6	5.7	2.2	1.6
Academic coursework completed					
All high[1]	14.0	23.0	23.1	22.5	25.4
Mid-level or mixed[2]	86.0	77.0	76.9	77.5	74.6
All low[3]	0.0	0.0	0.0	0.0	0.0
Grade 9 mathematics					
High (geometry or higher)[4]	22.2	18.0	24.3	21.3	31.8
Mid-level (prealgebra or algebra 1)	76.8	77.2	73.1	75.8	65.7
Low (no or low mathematics)[5]	1.1	4.9	2.6	3.0	2.5
School urbanicity					
Urban	24.3	—	29.8	—	29.8
Suburban	44.9	—	38.4	—	36.3
Rural	30.9	—	31.8	—	33.9

See notes at end of table.

Table 49. Percentage distribution of public high school graduates who completed both an occupational concentration and college-preparatory coursework, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	8.0	10.1
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	59.9	62.9
Low (5 percent or less in NSLP)	—	—	—	14.1	9.9
Not reported	—	—	—	18.0	17.1

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Occupational concentrators earned 3.0 or more credits in one of the following 10 broad occupational program areas: agriculture, business, marketing, health care, protective services, technology, trade and industry, food service and hospitality, child care and education, and personal and other services. College-preparatory coursework is defined as earning 4.0 or more credits in English; 3.0 or more credits in mathematics at the algebra 1 or higher level; 2.0 or more credits in biology, chemistry, or physics; 2.0 or more credits in social studies with at least 1.0 credit in U.S. or world history; and 2.0 or more credits in a single foreign language. NSLP is the National School Lunch Program. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 50. **Percentage of public high school graduates who completed high-level mathematics courses in grade 9, by selected characteristics, including special and protected populations status: Various years, 1982–98**

	1982	1990	1992	1994	1998
Total	7.9	10.6	12.9	14.9	20.4
Race/ethnicity					
American Indian/Alaska Native	4.0	10.9	2.7	8.0	18.1
Asian/Pacific Islander	18.8	23.5	21.3	23.7	30.3
Black, non-Hispanic	3.3	6.1	8.0	7.8	15.2
Hispanic	2.8	5.8	8.5	10.2	13.5
White, non-Hispanic	9.2	11.5	13.9	16.5	22.0
Sex					
Male	7.4	10.6	11.1	14.2	19.0
Female	8.3	10.7	14.5	15.5	21.0
Disability status (grade 12)					
Has disability	5.9	0.6	—	3.1	3.5
No indicated disability	8.1	10.9	—	15.3	20.9
English proficiency (grade 12)					
Limited	—	4.7	—	6.4	5.3
Proficient	—	10.7	—	14.9	20.5
Grade-point average (GPA)					
High (greater than 3.5)	27.0	33.8	44.0	41.3	49.9
Mid-level (2.0 to 3.5)	6.8	9.3	10.6	12.1	15.1
Low (less than 2.0)	2.1	2.4	1.1	2.8	3.9
Academic coursework completed					
All high[1]	38.9	45.6	52.8	51.3	57.8
Mid-level or mixed[2]	6.7	6.8	6.6	8.8	14.3
All low[3]	‡	‡	‡	‡	‡
Grade 9 mathematics					
High (geometry or higher)[4]	100.0	100.0	100.0	100.0	100.0
Mid-level (prealgebra or algebra 1)	0	0	0	0	0
Low (no or low mathematics)[5]	0	0	0	0	0
School urbanicity					
Urban	7.4	—	16.4	—	25.5
Suburban	9.6	—	13.3	—	21.5
Rural	5.6	—	9.9	—	14.6

See notes at end of table.

Table 50. Percentage of public high school graduates who completed high-level mathematics courses in grade 9, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	12.6	13.0
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	15.5	18.4
Low (5 percent or less in NSLP)	—	—	—	17.6	27.8
Not reported	—	—	—	11.2	24.8

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: High-level grade 9 mathematics courses include geometry, algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 51. Percentage of occupational concentrators who completed high-level mathematics courses in grade 9, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	4.2	4.6	6.2	7.0	14.3
Race/ethnicity					
American Indian/Alaska Native	‡	‡	‡	‡	14.2
Asian/Pacific Islander	14.9	13.1	7.0	12.0	26.2
Black, non-Hispanic	1.8	4.9	4.6	5.1	15.5
Hispanic	2.0	3.5	6.3	5.3	13.5
White, non-Hispanic	4.9	4.6	6.6	7.8	13.7
Sex					
Male	3.3	4.6	6.4	7.0	12.4
Female	5.4	4.6	6.0	7.2	17.0
Disability status (grade 12)					
Has disability	3.3	1.1	—	2.7	4.1
No indicated disability	4.3	4.7	—	7.3	14.7
English proficiency (grade 12)					
Limited	—	‡	—	‡	‡
Proficient	—	4.6	—	7.1	14.3
Grade-point average (GPA)					
High (greater than 3.5)	19.8	22.5	35.2	23.6	46.0
Mid-level (2.0 to 3.5)	3.9	4.6	5.6	6.7	11.5
Low (less than 2.0)	1.8	1.5	1.5	2.1	3.1
Academic coursework completed					
All high[1]	‡	42.2	47.8	45.9	56.3
Mid-level or mixed[2]	4.2	3.8	4.7	5.3	10.8
All low[3]	‡	‡	‡	‡	‡
Grade 9 mathematics					
High (geometry or higher)[4]	100.0	100.0	100.0	100.0	100.0
Mid-level (prealgebra or algebra 1)	‡	‡	‡	‡	‡
Low (no or low mathematics)[5]	‡	‡	‡	‡	‡
School urbanicity					
Urban	3.8	—	6.8	—	20.3
Suburban	5.4	—	6.5	—	13.9
Rural	3.0	—	5.7	—	10.7

See notes at end of table.

Table 51. **Percentage of occupational concentrators who completed high-level mathematics courses in grade 9, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued**

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	5.4	10.5
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	7.1	14.1
Low (5 percent or less in NSLP)	—	—	—	12.0	14.4
Not reported	—	—	—	4.6	17.7

—Not available.

‡Reporting standards not met. (Too few cases.)

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: Occupational concentrators earned 3.0 or more credits in one of the following 10 broad occupational program areas: agriculture, business, marketing, health care, protective services, technology, trade and industry, food service and hospitality, child care and education, and personal and other services. High-level grade 9 mathematics includes geometry, algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. NSLP is the National School Lunch Program.

SOURCE. U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table 52. Percentage of public high school graduates earning 3.0 or more occupational credits who met the New Basics core academic requirements, by selected characteristics, including special and protected populations status: Various years, 1982–98

	1982	1990	1992	1994	1998
Total	6.0	22.4	29.0	37.1	48.1
Race/ethnicity					
American Indian/Alaska Native	5.9	15.4	21.3	40.5	30.1
Asian/Pacific Islander	10.3	38.7	33.9	45.9	57.5
Black, non-Hispanic	5.1	27.7	30.8	35.6	58.2
Hispanic	3.5	19.0	26.6	31.3	37.6
White, non-Hispanic	6.6	21.8	28.9	39.2	47.4
Sex					
Male	6.7	22.9	28.7	35.3	45.3
Female	5.2	21.9	29.3	39.3	52.3
Disability status (grade 12)					
Has disability	5.5	5.9	—	16.0	25.5
No indicated disability	6.1	23.0	—	38.3	49.0
English proficiency (grade 12)					
Limited	—	—	—	29.4	34.9
Proficient	—	22.5	—	37.2	48.1
Grade-point average (GPA)					
High (greater than 3.5)	18.3	55.3	59.6	73.0	77.1
Mid-level (2.0 to 3.5)	6.2	23.7	29.1	38.1	46.4
Low (less than 2.0)	2.5	10.7	18.7	17.4	26.6
Academic coursework completed					
All high[1]	27.1	77.0	77.7	81.5	84.2
Mid-level or mixed[2]	6.0	21.6	27.6	35.5	46.2
All low[3]	0.0	3.9	3.5	9.1	9.8
Grade 9 mathematics					
High (geometry or higher)[4]	14.4	49.3	64.1	60.7	68.6
Mid-level (prealgebra or algebra 1)	7.8	26.6	33.1	43.2	50.3
Low (no or low mathematics)[5]	3.2	11.5	12.8	18.0	24.1
School urbanicity					
Urban	4.3	—	33.4	—	55.0
Suburban	7.0	—	29.2	—	47.3
Rural	5.5	—	26.5	—	44.4

See notes at end of table.

Table 52. Percentage of public high school graduates earning 3.0 or more occupational credits who met the New Basics core academic requirements, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

	1982	1990	1992	1994	1998
School poverty level					
High (greater than 50 percent in NSLP)	—	—	—	36.1	53.6
Middle (greater than 5 to 50 percent in NSLP)	—	—	—	38.5	46.4
Low (5 percent or less in NSLP)	—	—	—	36.9	46.0
Not reported	—	—	—	33.0	52.4

—Not available.

[1] Graduates completed at least some high-level coursework in each of mathematics, science, and English. High-level mathematics includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus. High-level science includes chemistry 1 and 2 and physics 1 and 2. High-level English includes at least some honors-level English courses.

[2] Graduates either completed no high-level and no low-level mathematics, science, and English coursework or completed some high- or some low-level coursework but not in all three subject areas.

[3] Graduates completed only low-level mathematics, science, and English coursework. Low-level mathematics includes no mathematics; remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; prealgebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics. Low-level science includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science. Low-level English includes at least some below-grade or low academic level English courses.

[4] Higher grade 9 mathematics includes algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

[5] Low grade 9 mathematics includes remedial mathematics; general, basic, or consumer mathematics; technical or vocational mathematics; but no higher mathematics.

NOTE: The New Basics core academic requirements include 4 years of English and 3 years each of mathematics, science, and social studies. NSLP is the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Appendix A—Standard Error Tables

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Table A1. **Standard errors for table 1: Percentage of public high school graduates taking vocational/technical education courses, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.19	0.24	0.27	0.32	0.48
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	0.88	1.54	1.13	0.82	1.16
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	0.92	0.987	0.567	0.747	1.752
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.20	0.29	1.39	0.34	0.31
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.23	0.29	0.43	0.36	0.43
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.25	0.29	0.28	0.39	0.57
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.27	0.23	0.25	0.32	0.43
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.24	0.32	0.44	0.39	0.57
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.27	0.16	—	0.36	0.41
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.21	0.24	—	0.32	0.49
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	2.00	—	1.78	1.64
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.24	—	0.32	0.48
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.88	0.90	0.67	0.76	1.20
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.23	0.24	0.32	0.34	0.39
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A1. Standard errors for table 1: Percentage of public high school graduates taking vocational/technical education courses, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.18	0.12	0.32	0.21	0.51
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	2.10	0.90	0.94	1.07	1.23
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.19	0.20	0.27	0.25	0.45
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	0.00	0.14	0.80	0.12	0.26
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.97	0.69	1.02	0.88	1.01
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.26	0.28	0.34	0.34	0.56
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.24	0.19	0.21	0.40	0.37
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.49	—	0.81	—	0.85
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.29	—	0.32	—	0.67
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.27	—	0.40	—	0.55
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.50	0.48
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.29	0.59
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	1.53	1.42
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.53	0.80
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A2. Standard errors for table 2: Percentage of public high school graduates taking occupational courses, by selected characteristics, including special and protected populations status: Various years, 1982–98

		1982	1990	1992	1994	1998
Total	s.e.	0.47	0.68	0.48	0.66	0.80
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	2.21	1.82	2.09	1.76	1.57
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	3.07	1.98	1.36	1.14	1.06
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	1.25	1.50	1.64	0.80	0.80
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	1.01	1.10	1.97	0.95	0.81
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.55	0.72	0.52	0.76	0.98
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.58	0.59	0.58	0.55	0.70
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.67	0.87	0.71	0.85	0.96
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	1.35	2.23	—	1.33	1.40
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.49	0.66	—	0.66	0.81
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	3.64	—	3.59	2.72
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.69	—	0.66	0.80
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	1.76	1.67	1.30	1.41	1.77
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.56	0.71	0.56	0.66	0.68
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A2. **Standard errors for table 2: Percentage of public high school graduates taking occupational courses, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued**

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.93	0.81	0.70	0.55	1.07
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	6.51	1.62	1.56	1.64	1.88
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.48	0.66	0.49	0.63	0.76
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	1.44	1.10	1.04	0.92	1.54
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	1.86	1.32	1.32	1.53	1.64
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.68	0.74	0.53	0.74	0.79
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.63	0.85	1.04	0.84	0.72
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	1.20	—	1.27	—	1.51
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.65	—	0.68	—	1.14
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.82	—	0.76	—	0.83
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	1.29	1.24
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.73	0.88
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	2.23	1.88
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	1.14	1.78
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A3. Standard errors for table 3: Average number of vocational/technical credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98

		1982	1990	1992	1994	1998
Total	s.e.	0.059	0.079	0.063	0.068	0.098
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	0.221	0.190	0.374	0.256	0.164
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	0.202	0.337	0.199	0.236	0.222
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.140	0.166	0.164	0.121	0.149
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.106	0.150	0.148	0.124	0.121
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.067	0.085	0.072	0.080	0.114
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.075	0.084	0.087	0.074	0.099
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.067	0.087	0.074	0.074	0.114
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.120	0.269	—	0.190	0.288
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.061	0.076	—	0.067	0.098
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	0.378	—	0.277	0.163
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.079	—	0.068	0.098
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.154	0.103	0.077	0.097	0.124
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.064	0.081	0.069	0.073	0.105
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A3. Standard errors for table 3: Average number of vocational/technical credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.097	0.100	0.125	0.073	0.200
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	0.213	0.096	0.068	0.075	0.135
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.060	0.076	0.065	0.073	0.104
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	0.210	0.205	0.348	0.236	0.389
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.132	0.123	0.082	0.098	0.146
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.078	0.082	0.072	0.078	0.114
	weighted n (in 1,000s)	1,374	1,546	1369	1,380	1,635
Low (no or low mathematics)	s.e.	0.076	0.118	0.115	0.110	0.144
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.130	—	0.113	—	0.197
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.082	—	0.078	—	0.131
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.107	—	0.110	—	0.161
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.181	0.251
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.089	0.128
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.202	0.254
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.157	0.152
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A4. Standard errors for table 4: Average number of occupational credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98

		1982	1990	1992	1994	1998
Total	s.e.	0.053	0.065	0.050	0.057	0.074
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	0.232	0.157	0.347	0.183	0.162
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	0.140	0.201	0.190	0.151	0.119
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.140	0.135	0.134	0.097	0.115
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.100	0.126	0.122	0.123	0.104
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.059	0.075	0.057	0.067	0.087
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.074	0.074	0.076	0.063	0.085
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.053	0.073	0.059	0.061	0.080
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.112	0.279	—	0.171	0.206
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.055	0.063	—	0.056	0.074
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	0.343	—	0.235	0.157
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.066	—	0.057	0.075
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.129	0.078	0.060	0.077	0.093
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.056	0.066	0.055	0.060	0.076
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A4. Standard errors for table 4: Average number of occupational credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.095	0.101	0.117	0.072	0.171
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	0.194	0.075	0.067	0.057	0.110
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.054	0.063	0.053	0.064	0.081
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	0.197	0.235	0.296	0.201	0.328
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.110	0.090	0.076	0.069	0.141
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.070	0.069	0.057	0.063	0.088
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.069	0.096	0.105	0.091	0.092
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.115	—	0.093	—	0.164
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.069	—	0.068	—	0.097
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.103	—	0.087	—	0.079
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.173	0.211
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.070	0.087
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.166	0.175
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.115	0.140
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A5. **Standard errors for table 5: Percentage of total credits earned by public high school graduates that are vocational/technical credits, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.24	0.32	0.24	0.27	0.34
	weighted n (in 1,000s)	2607	2505	2174	2213	2617
Race/ethnicity						
American Indian/Alaska Native	s.e.	1.00	0.85	1.56	1.10	0.67
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	0.80	1.55	0.82	1.14	0.94
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.62	0.71	0.57	0.51	0.51
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.46	0.66	0.65	0.51	0.41
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.28	0.35	0.29	0.32	0.41
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.31	0.35	0.31	0.29	0.37
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.29	0.35	0.30	0.30	0.39
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.55	1.14	—	0.80	0.97
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.25	0.31	—	0.27	0.34
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	1.68	—	1.11	0.62
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.32	—	0.28	0.34
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.55	0.43	0.29	0.36	0.41
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.27	0.33	0.28	0.30	0.36
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A5. Standard errors for table 5: Percentage of total credits earned by public high school graduates that are vocational/technical credits, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.46	0.41	0.42	0.36	0.76
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	0.95	0.37	0.27	0.28	0.47
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.25	0.30	0.26	0.31	0.36
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	0.99	0.77	0.88	0.95	1.38
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.56	0.51	0.32	0.40	0.45
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.31	0.33	0.29	0.31	0.39
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.34	0.42	0.44	0.46	0.55
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.59	—	0.50	—	0.62
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.34	—	0.34	—	0.52
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.43	—	0.37	—	0.51
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.67	0.87
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.37	0.41
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.76	1.17
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.57	0.48
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A6. Standard errors for table 6: Percentage of total vocational/technical credits earned by public high school graduates that are occupational credits, by selected characteristics, including special and protected populations status: Various years, 1982–98

		1982	1990	1992	1994	1998
Total	s.e.	0.50	0.88	0.62	0.85	1.02
	weighted n (in 1,000s)	2559	2454	2125	2150	2526
Race/ethnicity						
American Indian/Alaska Native	s.e.	3.32	2.73	2.74	2.91	2.86
	weighted n (in 1,000s)	29	11	21	17	12
Asian/Pacific Islander	s.e.	2.72	1.39	1.79	1.48	3.33
	weighted n (in 1,000s)	37	84	86	72	87
Black, non-Hispanic	s.e.	1.44	1.61	1.59	1.16	1.15
	weighted n (in 1,000s)	291	343	247	258	351
Hispanic	s.e.	1.05	1.77	1.74	1.30	1.26
	weighted n (in 1,000s)	305	191	204	165	292
White, non-Hispanic	s.e.	0.58	1.09	0.73	0.73	1.18
	weighted n (in 1,000s)	1,871	1,737	1,558	1,516	1,780
Sex						
Male	s.e.	0.67	0.76	0.88	0.82	0.96
	weighted n (in 1,000s)	1,232	1,172	1,051	1,056	1,195
Female	s.e.	0.61	1.11	0.81	0.80	1.10
	weighted n (in 1,000s)	1,328	1,279	1,073	1,090	1,293
Disability status (grade 12)						
Has disability	s.e.	1.31	2.46	—	1.70	1.94
	weighted n (in 1,000s)	225	64	—	82	73
No indicated disability	s.e.	0.52	0.88	—	0.87	1.02
	weighted n (in 1,000s)	2,315	2,390	—	2,068	2,453
English proficiency (grade 12)						
Limited	s.e.	—	3.80	—	3.59	4.24
	weighted n (in 1,000s)	—	12	—	18	18
Proficient	s.e.	—	0.88	—	0.85	1.02
	weighted n (in 1,000s)	—	2,442	—	2,132	2,508
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	1.40	1.69	1.27	1.49	1.59
	weighted n (in 1,000s)	248	242	224	290	422
Mid-level (2.0 to 3.5)	s.e.	0.55	0.89	0.67	0.83	1.01
	weighted n (in 1,000s)	1,779	1,775	1,607	1,557	1,921

See notes at end of table.

Table A6. Standard errors for table 6: Percentage of total vocational/technical credits earned by public high school graduates that are occupational credits, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	1.12	1.04	1.37	1.03	1.29
	weighted n (in 1,000s)	532	437	292	303	183
Academic coursework completed						
All high	s.e.	4.57	1.52	1.39	1.39	1.75
	weighted n (in 1,000s)	30	257	293	303	356
Mid-level or mixed	s.e.	0.51	0.88	0.67	0.87	1.04
	weighted n (in 1,000s)	2,439	2,064	1,748	1,775	2,084
All low	s.e.	2.08	2.02	1.97	1.53	1.91
	weighted n (in 1,000s)	86	117	74	55	57
Grade 9 mathematics						
High (geometry or higher)	s.e.	1.59	1.25	1.19	1.59	1.61
	weighted n (in 1,000s)	195	253	267	308	504
Mid-level (prealgebra or algebra 1)	s.e.	0.68	0.96	0.71	0.92	1.01
	weighted n (in 1,000s)	1,347	1,514	1,337	1,345	1,583
Low (no or low mathematics)	s.e.	0.70	1.03	1.28	0.83	1.22
	weighted n (in 1,000s)	1,017	687	521	497	439
School urbanicity						
Urban	s.e.	1.28	—	1.31	—	1.64
	weighted n (in 1,000s)	489	—	471	—	706
Suburban	s.e.	0.72	—	1.08	—	1.17
	weighted n (in 1,000s)	1,235	—	938	—	988
Rural	s.e.	0.87	—	0.82	—	1.79
	weighted n (in 1,000s)	836	—	715	—	832
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	2.82	1.50
	weighted n (in 1,000s)	—	—	—	182	237
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	1.09	1.44
	weighted n (in 1,000s)	—	—	—	1,268	1,514
Low (5 percent or less in NSLP)	s.e.	—	—	—	2.24	1.99
	weighted n (in 1,000s)	—	—	—	330	401
Not reported	s.e.	—	—	—	1.82	2.36
	weighted n (in 1,000s)	—	—	—	370	374

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A7. **Standard errors for table 7: Percentage of vocational/technical credits earned by public high school graduates that were earned in the 9th grade, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.38	0.67	0.56	0.56	0.72
	weighted n (in 1,000s)	2,554	2,454	2,123	2,150	2,526
Race/ethnicity						
American Indian/Alaska Native	s.e.	1.75	1.94	4.50	1.88	2.08
	weighted n (in 1,000s)	29	11	21	17	12
Asian/Pacific Islander	s.e.	1.54	1.94	1.36	1.13	1.80
	weighted n (in 1,000s)	37	84	86	72	87
Black, non-Hispanic	s.e.	0.94	1.04	1.37	0.62	0.97
	weighted n (in 1,000s)	290	343	246	258	351
Hispanic	s.e.	0.66	1.38	0.90	1.14	0.95
	weighted n (in 1,000s)	305	191	204	165	292
White, non-Hispanic	s.e.	0.42	0.80	0.68	0.69	0.87
	weighted n (in 1,000s)	1,868	1,737	1,558	1,516	1,780
Sex						
Male	s.e.	0.46	0.63	0.72	0.63	0.68
	weighted n (in 1,000s)	1,228	1,172	1,051	1,056	1,195
Female	s.e.	0.47	0.74	0.71	0.59	0.80
	weighted n (in 1,000s)	1,327	1,279	1,072	1,090	1,293
Disability status (grade 12)						
Has disability	s.e.	0.94	1.16	—	0.67	1.29
	weighted n (in 1,000s)	223	64	—	82	73
No indicated disability	s.e.	0.39	0.68	—	0.57	0.73
	weighted n (in 1,000s)	2,311	2,390	—	2,068	2,453
English proficiency (grade 12)						
Limited	s.e.	—	1.80	—	2.16	1.51
	weighted n (in 1,000s)	—	12	—	18	18
Proficient	s.e.	—	0.67	—	0.57	0.73
	weighted n (in 1,000s)	—	2,442	—	2,132	2,508
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	1.09	1.41	1.22	1.03	1.64
	weighted n (in 1,000s)	248	242	224	290	422
Mid-level (2.0 to 3.5)	s.e.	0.42	0.71	0.65	0.56	0.60
	weighted n (in 1,000s)	1,775	1,775	1,606	1,557	1,921

See notes at end of table.

Table A7. Standard errors for table 7: Percentage of vocational/technical credits earned by public high school graduates that were earned in the 9th grade, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.56	0.57	0.88	0.60	0.97
	weighted n (in 1,000s)	530	437	292	303	183
Academic coursework completed						
All high	s.e.	3.50	1.71	1.19	1.04	1.75
	weighted n (in 1,000s)	30	257	293	303	356
Mid-level or mixed	s.e.	0.38	0.63	0.58	0.58	0.69
	weighted n (in 1,000s)	2,433	2,064	1,746	1,775	2,084
All low	s.e.	1.13	0.91	1.28	0.92	0.88
	weighted n (in 1,000s)	86	117	74	55	57
Grade 9 mathematics						
High (geometry or higher)	s.e.	1.24	1.39	1.19	1.19	1.16
	weighted n (in 1,000s)	195	253	267	308	504
Mid-level (prealgebra or algebra 1)	s.e.	0.50	0.77	0.67	0.60	0.87
	weighted n (in 1,000s)	1,346	1,514	1,337	1,345	1,583
Low (no or low mathematics)	s.e.	0.45	0.89	0.86	0.58	0.63
	weighted n (in 1,000s)	1,014	687	519	497	439
School urbanicity						
Urban	s.e.	0.91	—	1.03	—	1.40
	weighted n (in 1,000s)	488	—	470	—	706
Suburban	s.e.	0.52	—	0.87	—	1.03
	weighted n (in 1,000s)	1,235	—	938	—	988
Rural	s.e.	0.66	—	0.91	—	1.22
	weighted n (in 1,000s)	832	—	714	—	832
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	1.54	1.22
	weighted n (in 1,000s)	—	—	—	182	237
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.78	0.92
	weighted n (in 1,000s)	—	—	—	1,268	1,514
Low (5 percent or less in NSLP)	s.e.	—	—	—	1.49	2.29
	weighted n (in 1,000s)	—	—	—	330	401
Not reported	s.e.	—	—	—	1.15	1.76
	weighted n (in 1,000s)	—	—	—	370	374

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A8. **Standard errors for table 8: Percentage of vocational/technical credits earned by public high school graduates that were earned in the 10th grade, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.34	0.58	0.57	0.49	0.54
	weighted n (in 1,000s)	2,554	2,454	2,123	2,150	2,526
Race/ethnicity						
American Indian/Alaska Native	s.e.	2.23	2.47	1.57	1.45	1.68
	weighted n (in 1,000s)	29	11	21	17	12
Asian/Pacific Islander	s.e.	1.83	2.49	1.26	0.88	0.84
	weighted n (in 1,000s)	37	84	86	72	87
Black, non-Hispanic	s.e.	0.79	0.88	1.04	0.76	0.75
	weighted n (in 1,000s)	290	343	246	258	351
Hispanic	s.e.	0.55	1.01	0.95	1.46	0.53
	weighted n (in 1,000s)	305	191	204	165	292
White, non-Hispanic	s.e.	0.39	0.67	0.72	0.61	0.65
	weighted n (in 1,000s)	1,868	1,737	1,558	1,516	1,780
Sex						
Male	s.e.	0.42	0.58	0.53	0.44	0.54
	weighted n (in 1,000s)	1,228	1,172	1,051	1,056	1,195
Female	s.e.	0.44	0.63	0.96	0.59	0.60
	weighted n (in 1,000s)	1,327	1,279	1,072	1,090	1,293
Disability status (grade 12)						
Has disability	s.e.	0.88	0.78	—	0.63	0.85
	weighted n (in 1,000s)	223	64	—	82	73
No indicated disability	s.e.	0.36	0.59	—	0.50	0.55
	weighted n (in 1,000s)	2,311	2,390	—	2,068	2,453
English proficiency (grade 12)						
Limited	s.e.	—	2.99	—	2.77	1.56
	weighted n (in 1,000s)	—	12	—	18	18
Proficient	s.e.	—	0.58	—	0.49	0.54
	weighted n (in 1,000s)	—	2,442	—	2,132	2,508
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	1.02	1.41	0.92	1.11	0.97
	weighted n (in 1,000s)	248	242	224	290	422
Mid-level (2.0 to 3.5)	s.e.	0.38	0.60	0.70	0.48	0.50
	weighted n (in 1,000s)	1,775	1,775	1,606	1,557	1,921

See notes at end of table.

Table A8. Standard errors for table 8: Percentage of vocational/technical credits earned by public high school graduates that were earned in the 10th grade, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.55	0.62	0.93	0.53	0.78
	weighted n (in 1,000s)	530	437	292	303	183
Academic coursework completed						
All high	s.e.	2.67	1.45	1.02	1.21	1.01
	weighted n (in 1,000s)	30	257	293	303	356
Mid-level or mixed	s.e.	0.35	0.56	0.65	0.42	0.52
	weighted n (in 1,000s)	2,433	2,064	1,746	1,775	2,084
All low	s.e.	1.15	0.95	1.41	0.74	1.24
	weighted n (in 1,000s)	86	117	74	55	57
Grade 9 mathematics						
High (geometry or higher)	s.e.	1.38	1.26	1.00	1.29	1.11
	weighted n (in 1,000s)	195	253	267	308	504
Mid-level (prealgebra or algebra 1)	s.e.	0.43	0.61	0.81	0.52	0.53
	weighted n (in 1,000s)	1,346	1,514	1,337	1,345	1,583
Low (no or low mathematics)	s.e.	0.42	0.65	0.60	0.40	0.66
	weighted n (in 1,000s)	1,014	687	519	497	439
School urbanicity						
Urban	s.e.	0.98	—	0.84	—	0.88
	weighted n (in 1,000s)	488	—	470	—	706
Suburban	s.e.	0.45	—	1.13	—	1.10
	weighted n (in 1,000s)	1,235	—	938	—	988
Rural	s.e.	0.58	—	0.59	—	0.65
	weighted n (in 1,000s)	832	—	714	—	832
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	1.17	0.99
	weighted n (in 1,000s)	—	—	—	182	237
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.55	0.53
	weighted n (in 1,000s)	—	—	—	1,268	1,514
Low (5 percent or less in NSLP)	s.e.	—	—	—	1.54	2.48
	weighted n (in 1,000s)	—	—	—	330	401
Not reported	s.e.	—	—	—	1.11	1.48
	weighted n (in 1,000s)	—	—	—	370	374

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table A9. **Standard errors for table 9: Percentage of vocational/technical credits earned by public high school graduates that were earned in the 11th grade, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.35	0.41	0.42	0.40	0.50
	weighted n (in 1,000s)	2,554	2,454	2,123	2,150	2,526
Race/ethnicity						
American Indian/Alaska Native	s.e.	1.93	1.68	2.30	1.97	1.64
	weighted n (in 1,000s)	29	11	21	17	12
Asian/Pacific Islander	s.e.	1.86	1.62	1.03	0.94	0.86
	weighted n (in 1,000s)	37	84	86	72	87
Black, non-Hispanic	s.e.	0.79	0.76	1.41	0.62	0.77
	weighted n (in 1,000s)	290	343	246	258	351
Hispanic	s.e.	0.65	0.85	1.53	1.84	0.86
	weighted n (in 1,000s)	305	191	204	165	292
White, non-Hispanic	s.e.	0.43	0.49	0.47	0.42	0.59
	weighted n (in 1,000s)	1,868	1,737	1,558	1,516	1,780
Sex						
Male	s.e.	0.51	0.42	0.64	0.41	0.48
	weighted n (in 1,000s)	1,228	1,172	1,051	1,056	1,195
Female	s.e.	0.43	0.49	0.53	0.45	0.60
	weighted n (in 1,000s)	1,327	1,279	1,072	1,090	1,293
Disability status (grade 12)						
Has disability	s.e.	0.87	1.19	—	0.78	1.02
	weighted n (in 1,000s)	223	64	—	82	73
No indicated disability	s.e.	0.38	0.41	—	0.41	0.51
	weighted n (in 1,000s)	2,311	2,390	—	2,068	2,453
English proficiency (grade 12)						
Limited	s.e.	—	2.76	—	2.10	1.50
	weighted n (in 1,000s)	—	12	—	18	18
Proficient	s.e.	—	0.41	—	0.40	0.51
	weighted n (in 1,000s)	—	2,442	—	2,132	2,508
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	1.16	1.20	1.03	0.86	1.17
	weighted n (in 1,000s)	248.00	242.00	224.00	290.00	422.00
Mid-level (2.0 to 3.5)	s.e.	0.40	0.42	0.48	0.42	0.40
	weighted n (in 1,000s)	1,775	1,775	1,606	1,557	1,921

See notes at end of table.

Table A9. **Standard errors for table 9: Percentage of vocational/technical credits earned by public high school graduates that were earned in the 11th grade, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued**

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.61	0.64	1.12	0.48	0.74
	weighted n (in 1,000s)	530	437	292	303	183
Academic coursework completed						
All high	s.e.	3.36	0.95	1.11	0.76	1.19
	weighted n (in 1,000s)	30	257	293	303	356
Mid-level or mixed	s.e.	0.36	0.42	0.44	0.40	0.48
	weighted n (in 1,000s)	2,433	2,064	1,746	1,775	2,084
All low	s.e.	1.22	1.11	1.84	0.96	1.15
	weighted n (in 1,000s)	86	117	74	55	57
Grade 9 mathematics						
High (geometry or higher)	s.e.	1.41	0.84	1.07	1.05	0.80
	weighted n (in 1,000s)	195	253	267	308	504
Mid-level (prealgebra or algebra 1)	s.e.	0.50	0.43	0.49	0.40	0.58
	weighted n (in 1,000s)	1,346	1,514	1,337	1,345	1,583
Low (no or low mathematics)	s.e.	0.43	0.71	0.96	0.53	0.42
	weighted n (in 1,000s)	1,014	687	519	497	439
School urbanicity						
Urban	s.e.	0.83	—	1.02	—	1.05
	weighted n (in 1,000s)	488	—	470	—	706
Suburban	s.e.	0.51	—	0.71	—	0.63
	weighted n (in 1,000s)	1,235	—	938	—	988
Rural	s.e.	0.62	—	0.54	—	0.82
	weighted n (in 1,000s)	832	—	714	—	832
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	1.43	0.82
	weighted n (in 1,000s)	—	—	—	182	237
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.54	0.59
	weighted n (in 1,000s)	—	—	—	1,268	1,514
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.79	1.53
	weighted n (in 1,000s)	—	—	—	330	401
Not reported	s.e.	—	—	—	0.75	0.84
	weighted n (in 1,000s)	—	—	—	370	374

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A10. Standard errors for table 10: Percentage of vocational/technical credits earned by public high school graduates that were earned in the 12th grade, by selected characteristics, including special and protected populations status: Various years, 1982–98

		1982	1990	1992	1994	1998
Total	s.e.	0.41	0.57	0.52	0.48	0.61
	weighted n (in 1,000s)	2,554	2,454	2,123	2,150	2,526
Race/ethnicity						
American Indian/Alaska Native	s.e.	1.97	2.31	2.63	2.50	2.25
	weighted n (in 1,000s)	29	11	21	17	12
Asian/Pacific Islander	s.e.	1.81	2.19	1.51	1.23	1.40
	weighted n (in 1,000s)	37	84	86	72	87
Black, non-Hispanic	s.e.	1.08	1.11	1.57	1.00	0.79
	weighted n (in 1,000s)	290	343	246	258	351
Hispanic	s.e.	0.78	1.21	1.52	0.85	0.97
	weighted n (in 1,000s)	305	191	204	165	292
White, non-Hispanic	s.e.	0.49	0.66	0.60	0.60	0.73
	weighted n (in 1,000s)	1,868	1,737	1,558	1,516	1,780
Sex						
Male	s.e.	0.55	0.60	0.64	0.56	0.64
	weighted n (in 1,000s)	1,228	1,172	1,051	1,056	1,195
Female	s.e.	0.49	0.65	0.70	0.53	0.68
	weighted n (in 1,000s)	1,327	1,279	1,072	1,090	1,293
Disability status (grade 12)						
Has disability	s.e.	1.08	1.25	—	0.79	1.13
	weighted n (in 1,000s)	223	64	—	82	73
No indicated disability	s.e.	0.43	0.58	—	0.49	0.61
	weighted n (in 1,000s)	2,311	2,390	—	2,068	2,453
English proficiency (grade 12)						
Limited	s.e.	—	2.46	—	3.08	2.02
	weighted n (in 1,000s)	—	12	—	18	18
Proficient	s.e.	—	0.57	—	0.49	0.61
	weighted n (in 1,000s)	—	2,442	—	2,132	2,508
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	1.23	1.38	1.25	1.20	0.75
	weighted n (in 1,000s)	248	242	224	290	422
Mid-level (2.0 to 3.5)	s.e.	0.44	0.62	0.58	0.50	0.61
	weighted n (in 1,000s)	1,775	1,775	1,606	1,557	1,921

See notes at end of table.

Table A10. **Standard errors for table 10: Percentage of vocational/technical credits earned by public high school graduates that were earned in the 12th grade, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued**

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.87	0.86	1.25	0.69	0.97
	weighted n (in 1,000s)	530	437	292	303	183
Academic coursework completed						
All high	s.e.	3.77	1.48	1.10	1.17	1.04
	weighted n (in 1,000s)	30	257	293	303	356
Mid-level or mixed	s.e.	0.42	0.56	0.58	0.48	0.62
	weighted n (in 1,000s)	2,433	2,064	1,746	1,775	2,084
All low	s.e.	1.49	1.00	1.70	1.11	1.75
	weighted n (in 1,000s)	86	117	74	55	57
Grade 9 mathematics						
High (geometry or higher)	s.e.	1.63	1.25	1.09	1.21	1.04
	weighted n (in 1,000s)	195	253	267	308	504
Mid-level (prealgebra or algebra 1)	s.e.	0.53	0.65	0.62	0.54	0.71
	weighted n (in 1,000s)	1,346	1,514	1,337	1,345	1,583
Low (no or low mathematics)	s.e.	0.54	0.82	1.00	0.73	0.82
	weighted n (in 1,000s)	1,014	687	519	497	439
School urbanicity						
Urban	s.e.	1.11	—	1.11	—	1.17
	weighted n (in 1,000s)	488	—	470	—	706
Suburban	s.e.	0.55	—	0.88	—	0.99
	weighted n (in 1,000s)	1,235	—	938	—	988
Rural	s.e.	0.73	—	0.66	—	1.15
	weighted n (in 1,000s)	832	—	714	—	832
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	2.04	1.20
	weighted n (in 1,000s)	—	—	—	182	237
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.65	0.79
	weighted n (in 1,000s)	—	—	—	1,268	1,514
Low (5 percent or less in NSLP)	s.e.	—	—	—	1.73	1.95
	weighted n (in 1,000s)	—	—	—	330	401
Not reported	s.e.	—	—	—	1.19	1.49
	weighted n (in 1,000s)	—	—	—	370	374

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A11. **Standard errors for table 11: Percentage of public high school graduates earning 3.0 or more vocational/technical credits, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.79	1.29	1.12	1.19	1.48
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	4.31	4.83	5.43	4.72	3.90
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	4.02	7.83	3.31	4.55	5.21
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	2.17	2.63	2.89	2.00	2.45
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	1.30	2.99	3.09	2.42	1.90
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.93	1.30	1.33	1.35	1.72
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.94	1.40	1.49	1.24	1.40
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	1.02	1.37	1.37	1.27	1.75
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	2.03	2.99	—	1.92	2.51
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.83	1.28	—	1.20	1.50
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	8.39	—	7.01	3.92
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	1.30	—	1.19	1.49
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	2.44	2.39	2.10	2.22	2.43
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.88	1.35	1.29	1.19	1.58
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A11. Standard errors for table 11: Percentage of public high school graduates earning 3.0 or more vocational/technical credits, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	1.57	1.14	1.66	1.30	2.28
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	5.66	2.53	2.02	1.91	2.96
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.81	1.22	1.23	1.22	1.48
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	2.60	1.03	2.21	1.81	2.38
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	2.51	2.69	2.23	2.33	2.45
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	1.08	1.45	1.42	1.39	1.71
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.98	1.42	1.47	1.50	1.75
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	2.21	—	2.25	—	2.87
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	1.12	—	1.81	—	2.44
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	1.19	—	1.33	—	2.55
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	2.61	3.50
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	1.38	1.96
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	3.46	3.91
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	2.58	2.46
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A12. Standard errors for table 12: Percentage of public high school graduates earning 3.0 or more occupational credits, by selected characteristics, including special and protected populations status: Various years, 1982–98

		1982	1990	1992	1994	1998
Total	s.e.	0.85	1.25	1.02	1.06	1.24
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	6.10	3.89	5.07	4.78	4.09
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	3.56	6.43	3.69	3.55	3.01
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	2.33	2.87	2.50	2.04	2.21
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	1.69	2.51	3.01	2.95	2.07
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.99	1.38	1.19	1.23	1.43
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	1.12	1.44	1.47	1.12	1.38
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	1.08	1.42	1.22	1.19	1.41
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	2.20	3.66	—	2.73	3.23
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.88	1.24	—	1.06	1.24
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	5.60	—	5.04	4.32
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	1.26	—	1.07	1.24
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	2.01	1.80	1.60	1.92	1.92
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.96	1.28	1.14	1.07	1.28
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A12. Standard errors for table 12: Percentage of public high school graduates earning 3.0 or more occupational credits, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	1.76	1.86	2.48	1.34	1.86
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	4.48	1.88	1.63	1.20	2.38
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.87	1.24	1.13	1.20	1.34
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	3.60	2.89	3.55	2.85	4.30
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	2.36	2.00	1.77	1.44	2.24
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	1.14	1.34	1.27	1.26	1.48
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	1.21	1.69	1.81	1.48	1.73
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	1.95	—	2.13	—	2.56
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	1.24	—	1.55	—	1.93
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	1.45	—	1.48	—	1.55
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	3.54	3.36
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	1.28	1.51
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	2.72	3.40
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	2.11	2.73
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A13. **Standard errors for table 13: Percentage of public high school graduates concentrating in occupational education, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.83	1.01	0.79	0.95	0.87
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	7.63	3.96	5.32	3.38	4.19
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	2.74	4.55	3.65	2.44	2.64
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	2.21	2.31	2.14	1.79	1.52
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	1.75	2.30	2.13	2.84	1.80
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.96	1.12	0.92	1.14	0.97
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	1.17	1.21	1.17	1.09	1.16
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	1.00	1.20	0.96	1.04	1.07
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	2.04	4.33	—	2.89	2.23
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.84	0.98	—	0.93	0.86
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	5.03	—	4.99	1.93
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	1.01	—	0.95	0.87
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	1.72	1.03	1.05	1.31	1.23
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.92	1.02	0.88	0.96	0.90
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A13. Standard errors for table 13: Percentage of public high school graduates concentrating in occupational education, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	1.76	1.85	2.18	1.64	1.72
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	4.07	1.07	0.86	0.77	1.52
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.85	0.97	0.88	1.10	0.90
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	3.72	3.27	4.16	3.36	4.31
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	1.98	1.40	1.20	0.93	2.10
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	1.07	1.04	0.93	0.99	1.03
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	1.19	1.89	1.59	1.72	1.34
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	1.96	—	1.53	—	2.03
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	1.17	—	1.18	—	1.36
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	1.44	—	1.25	—	1.08
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	2.72	2.33
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	1.15	1.07
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	1.92	2.62
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	1.93	2.29
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A14. Standard errors for table 14: Percentage of public high school graduates earning 3.0 or more occupational credits who concentrated in occupational education, by selected characteristics, including special and protected populations status: Various years, 1982–98

		1982	1990	1992	1994	1998
Total	s.e.	1.03	1.35	1.20	1.48	1.10
	weighted n (in 1,000s)	1,205	1,076	918	928	1,147
Race/ethnicity						
American Indian/Alaska Native	s.e.	6.88	4.79	7.20	8.21	6.43
	weighted n (in 1,000s)	18	6	13	7	5
Asian/Pacific Islander	s.e.	7.70	5.33	6.49	3.33	3.92
	weighted n (in 1,000s)	12	27	34	23	31
Black, non-Hispanic	s.e.	2.61	2.88	3.43	1.86	2.18
	weighted n (in 1,000s)	130	151	106	121	168
Hispanic	s.e.	2.32	3.06	3.68	3.04	2.28
	weighted n (in 1,000s)	160	83	91	71	132
White, non-Hispanic	s.e.	1.21	1.55	1.40	1.90	1.27
	weighted n (in 1,000s)	872	774	671	655	809
Sex						
Male	s.e.	1.32	1.24	1.66	1.48	1.31
	weighted n (in 1,000s)	662	589	515	503	619
Female	s.e.	1.50	1.96	1.68	1.88	1.73
	weighted n (in 1,000s)	543	487	403	424	514
Disability status (grade 12)						
Has disability	s.e.	3.32	4.28	—	2.99	3.07
	weighted n (in 1,000s)	99	38	—	47	43
No indicated disability	s.e.	1.05	1.37	—	1.46	1.10
	weighted n (in 1,000s)	1,097	1,038	—	881	1,104
English proficiency (grade 12)						
Limited	s.e.	—	—	—	8.37	6.83
	weighted n (in 1,000s)	—	—	—	6	5
Proficient	s.e.	—	1.34	—	1.49	1.11
	weighted n (in 1,000s)	—	1,074	—	922	1,142
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	3.97	3.62	3.19	2.94	2.25
	weighted n (in 1,000s)	71	56	53	73	131
Mid-level (2.0 to 3.5)	s.e.	1.17	1.35	1.32	1.52	1.15
	weighted n (in 1,000s)	847	778	701	689	911

See notes at end of table.

Table A14. **Standard errors for table 14: Percentage of public high school graduates earning 3.0 or more occupational credits who concentrated in occupational education, by selected characteristics, including special and protected populations status: Various years, 1982–98 —Continued**

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	1.99	2.15	3.33	2.06	2.19
	weighted n (in 1,000s)	287	242	164	166	105
Academic coursework completed						
All high	s.e.	8.96	5.01	4.26	2.31	2.85
	weighted n (in 1,000s)	7	43	56	61	102
Mid-level or mixed	s.e.	1.05	1.23	1.30	1.58	1.11
	weighted n (in 1,000s)	1,142	944	798	821	992
All low	s.e.	3.67	3.29	4.87	3.70	4.74
	weighted n (in 1,000s)	53	78	55	36	38
Grade 9 mathematics						
High (geometry or higher)	s.e.	4.55	3.10	4.15	2.44	3.45
	weighted n (in 1,000s)	60	59	68	76	177
Mid-level (prealgebra or algebra 1)	s.e.	1.40	1.52	1.54	1.42	1.20
	weighted n (in 1,000s)	591	632	560	576	748
Low (no or low mathematics)	s.e.	1.36	1.89	1.86	2.19	1.66
	weighted n (in 1,000s)	554	384	290	276	222
School urbanicity						
Urban	s.e.	2.75	—	2.65	—	2.47
	weighted n (in 1,000s)	213	—	189	—	284
Suburban	s.e.	1.46	—	1.93	—	1.47
	weighted n (in 1,000s)	556	—	358	—	407
Rural	s.e.	1.62	—	1.89	—	2.12
	weighted n (in 1,000s)	436	—	371	—	456
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	3.13	3.33
	weighted n (in 1,000s)	—	—	—	84	129
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	1.75	1.62
	weighted n (in 1,000s)	—	—	—	572	716
Low (5 percent or less in NSLP)	s.e.	—	—	—	2.63	4.34
	weighted n (in 1,000s)	—	—	—	105	127
Not reported	s.e.	—	—	—	3.20	2.52
	weighted n (in 1,000s)	—	—	—	168	174

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A15. Standard errors for table 15: Percentage of public high school graduates completing an advanced concentration in occupational education, by selected characteristics, including special and protected populations status: Various years, 1982–98

		1982	1990	1992	1994	1998
Total	s.e.	0.71	0.64	0.63	0.72	0.81
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	9.13	3.59	4.95	2.94	3.13
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	2.29	2.33	3.50	1.95	2.16
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	1.86	1.67	1.36	1.28	1.62
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	1.53	1.59	1.68	1.81	1.36
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.83	0.72	0.76	0.89	0.89
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	1.05	0.87	0.94	0.90	1.17
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.87	0.91	0.78	0.81	0.87
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	1.74	3.46	—	2.16	2.19
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.73	0.64	—	0.71	0.82
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	4.50	—	2.55	1.96
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.65	—	0.73	0.82
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	1.63	0.80	0.74	0.95	0.77
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.81	0.65	0.72	0.71	0.87
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A15. Standard errors for table 15: Percentage of public high school graduates completing an advanced concentration in occupational education, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	1.46	1.19	1.69	1.39	1.60
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	3.20	0.78	0.68	0.63	1.24
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.74	0.64	0.71	0.84	0.88
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	3.08	2.97	3.93	2.60	3.62
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	1.65	1.10	0.92	0.72	2.07
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.91	0.66	0.76	0.72	0.98
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	1.09	1.23	1.35	1.29	1.20
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	1.53	—	1.33	—	1.73
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	1.04	—	0.87	—	0.94
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	1.28	—	1.07	—	1.55
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	2.53	2.18
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.86	1.14
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	1.91	1.30
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	1.60	1.66
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A16. **Standard errors for table 16: Percentage of public high school graduates concentrating in agriculture, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.29	0.35	0.26	0.37	0.54
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	0.90	2.04	1.98	2.09	0.87
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	0.36	—	0.31	0.81	0.32
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.35	0.16	0.38	0.40	0.24
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.58	0.67	0.24	0.30	0.57
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.35	0.44	0.34	0.51	0.68
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.54	0.65	0.49	0.57	0.68
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.16	0.23	0.16	0.25	0.46
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.58	1.68	—	1.36	1.87
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.30	0.33	—	0.37	0.51
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	—	—	1.26	—
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.35	—	0.37	0.54
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.84	0.29	0.32	0.62	0.89
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.30	0.39	0.31	0.42	0.52
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A16. Standard errors for table 16: Percentage of public high school graduates concentrating in agriculture, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.56	0.45	0.43	0.35	0.33
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	0.59	0.15	0.14	0.21	0.10
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.29	0.36	0.30	0.45	0.64
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	1.22	1.46	1.27	0.92	0.88
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.48	0.17	0.26	0.33	0.26
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.38	0.31	0.28	0.43	0.71
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.47	0.68	0.61	0.54	0.53
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.20	—	0.08	—	0.12
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.35	—	0.27	—	0.24
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.69	—	0.67	—	1.66
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	1.70	1.00
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.41	0.80
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.40	0.35
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.94	0.49
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A17. **Standard errors for table 17: Percentage of public high school graduates concentrating in business, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.46	0.60	0.42	0.45	0.43
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	2.15	2.00	1.39	3.17	1.17
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	1.41	1.60	2.35	1.11	0.56
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	1.33	1.72	0.99	1.02	1.04
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.96	2.01	1.41	1.31	0.77
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.56	0.50	0.49	0.49	0.50
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.28	0.39	0.42	0.36	0.36
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.82	0.93	0.69	0.67	0.59
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	1.04	0.69	—	0.99	0.64
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.48	0.60	—	0.46	0.45
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	—	—	3.10	0.96
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.59	—	0.45	0.44
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	1.25	0.63	0.70	0.69	0.59
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.57	0.60	0.48	0.47	0.50
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A17. Standard errors for table 17: Percentage of public high school graduates concentrating in business, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.86	1.09	1.16	0.81	0.67
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	2.65	0.59	0.51	0.49	0.73
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.48	0.61	0.50	0.49	0.46
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	2.05	1.55	1.09	1.60	1.15
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	1.39	0.70	0.70	0.54	0.40
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.61	0.58	0.59	0.53	0.54
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.75	1.22	0.61	0.60	0.64
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.98	3.14	0.92	1.09	0.88
	weighted n (in 1,000s)	501	312	484	303	743
Suburban	s.e.	0.63	0.58	0.55	0.77	0.52
	weighted n (in 1,000s)	1,261	949	961	918	1,028
Rural	s.e.	0.91	0.70	0.79	0.57	0.77
	weighted n (in 1,000s)	845	1,245	729	991	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	0.75	0.97	1.49
	weighted n (in 1,000s)	—	—	516	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	0.55	0.50	0.53
	weighted n (in 1,000s)	—	—	1,339	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	1.71	1.03	0.72
	weighted n (in 1,000s)	—	—	210	351	425
Not reported	s.e.	—	—	1.48	1.39	1.15
	weighted n (in 1,000s)	—	—	109	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A18. **Standard errors for table 18: Percentage of public high school graduates concentrating in business services, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.41	0.52	0.32	0.35	0.35
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	1.86	1.71	0.94	2.73	0.67
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	1.15	0.94	1.95	0.89	0.61
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	1.23	1.43	0.84	1.02	0.67
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.91	1.81	1.34	1.44	0.66
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.48	0.41	0.36	0.34	0.42
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.19	0.27	0.21	0.27	0.30
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.76	0.81	0.58	0.59	0.46
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.94	0.65	—	0.83	0.66
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.43	0.53	—	0.35	0.36
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	—	—	2.70	0.97
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.51	—	0.35	0.35
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	1.11	0.61	0.52	0.52	0.55
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.52	0.51	0.39	0.36	0.39
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A18. **Standard errors for table 18: Percentage of public high school graduates concentrating in business services, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued**

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.66	0.90	0.66	0.70	0.59
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	2.58	0.51	0.36	0.42	0.63
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.42	0.54	0.39	0.39	0.37
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	1.99	1.31	0.81	1.19	1.01
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	1.32	0.49	0.50	0.45	0.37
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.54	0.49	0.45	0.41	0.40
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.68	1.09	0.53	0.50	0.61
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.84	—	0.83	—	0.68
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.60	—	0.41	—	0.34
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.74	—	0.58	—	0.71
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.99	1.08
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.34	0.47
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.90	0.51
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	1.16	0.88
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A19. Standard errors for table 19: Percentage of public high school graduates concentrating in business management, by selected characteristics, including special and protected populations status: Various years, 1982–98

		1982	1990	1992	1994	1998
Total	s.e.	0.06	0.06	0.07	0.10	0.13
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	0.35	—	0.06	—	—
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.17	—	0.07	0.26	0.15
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.02	—	0.21	0.15	0.27
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.08	0.08	0.08	0.12	0.15
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.03	0.05	0.03	0.06	0.05
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.12	0.09	0.12	0.15	0.22
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.09	—	—	0.41	0.20
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.07	0.06	—	0.09	0.13
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.06	—	0.10	0.13
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.26	—	0.02	0.08	0.13
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.05	0.07	0.08	0.10	0.15
	weighted n (in 1,000s)	1812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A19. **Standard errors for table 19: Percentage of public high school graduates concentrating in business management, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued**

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.15	0.09	0.13	0.18	0.12
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	—	—	0.08	0.05	0.09
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.07	0.07	0.07	0.10	0.14
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	0.00	—	0.25	0.39	0.44
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.06	—	0.11	0.05	0.13
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.03	0.05	0.09	0.08	0.17
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.15	0.17	0.09	0.20	0.12
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.11	—	0.12	—	0.10
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.01	—	0.08	—	0.14
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.18	—	0.14	—	0.37
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	—	0.42
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.09	0.08
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.20	0.18
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.41	0.64
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A20. **Standard errors for table 20: Percentage of public high school graduates concentrating in marketing, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.19	0.29	0.18	0.23	0.22
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	0.74	—	—	—	—
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	0.41	—	0.11	0.27	0.24
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.56	0.42	0.53	0.61	0.56
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.34	0.71	0.24	0.49	0.59
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.23	0.33	0.22	0.28	0.26
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.25	0.29	0.18	0.20	0.20
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.28	0.35	0.28	0.30	0.30
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.58	0.71	—	0.47	0.58
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.20	0.29	—	0.24	0.23
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	—	—	0.78	—
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.29	—	0.23	0.23
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.17	0.32	0.06	0.21	0.13
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.21	0.31	0.16	0.27	0.24
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A20. **Standard errors for table 20: Percentage of public high school graduates concentrating in marketing, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued**

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.51	0.56	0.86	0.47	0.67
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	0.82	0.12	0.12	0.18	0.16
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.20	0.33	0.21	0.27	0.27
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	0.71	0.58	0.59	0.69	0.65
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.14	0.31	0.14	0.27	0.29
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.29	0.31	0.15	0.26	0.24
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.28	0.57	0.54	0.42	0.34
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.52	—	0.57	—	0.42
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.28	—	0.19	—	0.47
	weighted n (in 1,000s)	1261	—	961	—	1028
Rural	s.e.	0.28	—	0.23	—	0.40
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.77	0.64
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.31	0.31
	weighted n (in 1,000s)	—	—	—	1296	1565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.63	0.31
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.42	0.76
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A21. **Standard errors for table 21: Percentage of public high school graduates concentrating in health care, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.10	0.09	0.10	0.11	0.46
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	0.60	—	0.45	—	—
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	—	—	0.85	0.38	1.39
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.42	0.21	0.35	0.34	1.65
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.55	0.10	0.24	0.11	1.12
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.08	0.12	0.09	0.14	0.17
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.06	0.06	0.08	0.05	0.32
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.19	0.16	0.16	0.20	0.64
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.27	1.16	—	0.28	0.65
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.11	0.09	—	0.12	0.48
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.09	—	0.11	0.47
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.06	0.11	0.12	0.14	0.50
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.14	0.10	0.12	0.13	0.50
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A21. Standard errors for table 21: Percentage of public high school graduates concentrating in health care, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.18	0.22	0.19	0.23	0.47
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	0.88	—	0.09	0.15	0.93
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.11	0.11	0.10	0.12	0.41
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	0.62	0.76	0.64	0.68	0.40
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.07	0.14	0.00	0.16	2.06
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.09	0.12	0.08	0.14	0.21
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.24	0.17	0.33	0.19	0.22
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.16	—	0.19	—	1.58
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.12	—	0.13	—	0.24
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.25	—	0.20	—	0.28
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.48	1.00
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.16	0.74
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.18	0.50
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.24	0.47
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table A22. **Standard errors for table 22: Percentage of public high school graduates concentrating in protective services, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.02	—	0.04	0.02	0.03
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	—	—	0.05	—	—
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.07	—	0.13	0.04	0.08
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.03	—	0.04	0.02	0.03
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	—	—	0.04	0.04	0.05
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.04	—	0.06	0.01	0.01
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.07	—	—	0.23	—
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.02	—	—	0.02	0.03
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	—	—	0.02	0.03
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.03	—	0.05	0.02	0.04
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A22. **Standard errors for table 22: Percentage of public high school graduates concentrating in protective services, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued**

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	—	—	—	0.09	—
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.02	—	0.04	0.02	0.03
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	—	—	—	—	0.47
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	—	—	0.12	—	—
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.03	—	0.05	0.02	0.03
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.02	—	0.03	0.09	0.08
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	—	—	0.07	—	0.08
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.02	—	0.02	—	0.05
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.05	—	0.09	—	—
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.15	0.07
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.03	0.03
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	—	0.11
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A23. **Standard errors for table 23: Percentage of public high school graduates concentrating in trade and industry program areas, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.58	0.65	0.48	0.44	0.72
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	9.27	3.42	4.72	2.03	3.01
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	2.11	3.52	3.21	1.01	1.86
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	1.53	0.94	1.03	1.02	0.72
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	1.39	1.11	1.42	1.51	0.81
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.64	0.72	0.56	0.51	0.90
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	1.10	1.11	0.90	0.86	1.38
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.23	0.30	0.40	0.14	0.17
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	1.62	3.63	—	1.94	2.09
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.60	0.61	—	0.44	0.70
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	1.25	—	0.77	1.57
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.65	—	0.44	0.72
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.75	0.52	0.47	0.37	0.70
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.63	0.62	0.53	0.45	0.68
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975
Low (less than 2.0)	s.e.	1.45	1.38	1.51	1.17	1.84
	weighted n (in 1,000s)	534	438	295	306	186

See notes at end of table.

Table A23. Standard errors for table 23: Percentage of public high school graduates concentrating in trade and industry program areas, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Academic coursework completed						
All high	s.e.	3.14	0.55	0.44	0.30	0.51
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.59	0.62	0.53	0.50	0.74
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	3.54	3.39	3.78	2.27	3.93
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	1.29	0.64	0.58	0.39	0.55
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.70	0.61	0.56	0.43	0.80
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.96	1.30	1.17	0.95	1.25
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	1.39	—	1.06	—	0.78
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.81	—	0.62	—	1.06
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	1.04	—	0.91	—	1.61
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	1.64	1.52
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.56	0.89
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.97	0.85
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.88	1.59
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table A24. **Standard errors for table 24: Percentage of public high school graduates concentrating in construction, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.16	0.14	0.18	0.13	0.16
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	2.24	—	0.89	—	—
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	0.34	—	0.28	0.22	0.16
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.69	0.59	0.59	0.38	0.24
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.45	0.20	0.28	0.32	0.21
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.17	0.14	0.21	0.17	0.20
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.33	0.29	0.30	0.28	0.32
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.07	0.03	0.19	0.05	0.04
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.57	0.86	—	0.60	1.22
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.17	0.14	—	0.13	0.15
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.14	—	0.14	0.16
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.07	—	0.10	0.10	0.10
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.19	0.14	0.20	0.14	0.19
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975
Low (less than 2.0)	s.e.	0.43	0.39	0.55	0.37	0.54
	weighted n (in 1,000s)	534	438	295	306	186

See notes at end of table.

Table A24. **Standard errors for table 24: Percentage of public high school graduates concentrating in construction, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued**

		1982	1990	1992	1994	1998
Academic coursework completed						
All high	s.e.	—	—	0.04	—	0.12
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.16	0.15	0.19	0.15	0.17
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	1.24	0.66	1.55	0.76	2.01
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.14	—	0.05	0.06	0.16
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.16	0.11	0.22	0.12	0.16
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.33	0.35	0.38	0.33	0.39
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.34	—	0.45	—	0.16
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.16	—	0.21	—	0.17
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.39	—	0.33	—	0.39
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.46	0.56
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.15	0.18
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.27	0.55
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.53	0.33
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A25. **Standard errors for table 25: Percentage of public high school graduates concentrating in mechanics and repair, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.26	0.25	0.20	0.16	0.18
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	0.78	—	2.91	—	1.37
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	1.44	0.65	0.64	0.37	0.32
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.64	0.36	0.42	0.35	0.31
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.82	0.72	0.36	0.44	0.61
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.30	0.33	0.25	0.18	0.21
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.53	0.48	0.41	0.32	0.35
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.06	0.07	0.02	0.04	0.04
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.68	1.69	—	0.83	0.88
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.27	0.24	—	0.16	0.18
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	—	—	—	0.38
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.25	—	0.16	0.18
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.26	0.14	0.07	0.04	0.04
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.27	0.25	0.22	0.16	0.22
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A25. Standard errors for table 25: Percentage of public high school graduates concentrating in mechanics and repair, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.83	0.58	0.69	0.44	0.73
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	2.43	—	—	0.06	0.13
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.27	0.27	0.22	0.18	0.20
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	1.47	1.59	2.45	1.04	2.08
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.25	0.14	0.31	0.12	0.14
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.31	0.25	0.19	0.15	0.23
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.50	0.59	0.55	0.41	0.37
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.52	—	0.19	—	0.33
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.41	—	0.25	—	0.23
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.43	—	0.46	—	0.36
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.46	0.47
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.21	0.23
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.22	0.50
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.32	0.40
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table A26. **Standard errors for table 26: Percentage of public high school graduates concentrating in precision production, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.45	0.46	0.35	0.28	0.58
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	10.57	4.25	4.22	1.03	2.07
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	1.49	1.66	2.86	0.37	0.72
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	1.09	0.72	0.68	0.41	0.53
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.98	0.84	0.80	0.94	0.86
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.48	0.52	0.41	0.35	0.75
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.86	0.78	0.62	0.55	1.13
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.21	0.28	0.35	0.10	0.15
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	1.15	2.65	—	1.34	1.04
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.47	0.42	—	0.27	0.59
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	—	—	0.49	1.02
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.46	—	0.28	0.59
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.53	0.34	0.43	0.30	0.66
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.52	0.42	0.38	0.30	0.54
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A26. Standard errors for table 26: Percentage of public high school graduates concentrating in precision production, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.90	1.10	1.12	0.56	1.53
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	2.24	0.33	0.41	0.26	0.45
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.45	0.39	0.40	0.32	0.65
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	2.82	3.53	2.53	1.57	1.56
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.95	0.51	0.49	0.32	0.42
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.55	0.36	0.42	0.34	0.65
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.73	1.07	0.89	0.49	0.97
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	1.10	0.97	0.78	0.55	0.66
	weighted n (in 1,000s)	501	312	484	303	743
Suburban	s.e.	0.67	0.83	0.46	0.31	0.83
	weighted n (in 1,000s)	1,261	949	961	918	1,028
Rural	s.e.	0.74	0.68	0.69	0.54	1.40
	weighted n (in 1,000s)	845	1,245	729	991	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	0.69	1.25	1.28
	weighted n (in 1,000s)	—	—	516	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	0.47	0.37	0.71
	weighted n (in 1,000s)	—	—	1,339	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	0.82	0.74	0.42
	weighted n (in 1,000s)	—	—	210	351	425
Not reported	s.e.	—	—	1.68	0.68	1.47
	weighted n (in 1,000s)	—	—	109	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table A27. **Standard errors for table 27: Percentage of public high school graduates concentrating in print production, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.21	0.19	0.26	0.17	0.27
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	5.95	3.16	1.86	—	0.68
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	1.24	0.73	2.79	0.31	0.47
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.69	0.26	0.48	0.25	0.27
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.35	0.40	0.51	0.28	0.21
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.22	0.26	0.30	0.22	0.36
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.36	0.32	0.40	0.31	0.48
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.16	0.12	0.33	0.09	0.12
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.51	0.84	—	0.77	0.53
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.22	0.19	—	0.18	0.27
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	—	—	0.44	0.60
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.19	—	0.17	0.27
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.36	0.29	0.26	0.18	0.44
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.25	0.22	0.30	0.21	0.26
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A27. Standard errors for table 27: Percentage of public high school graduates concentrating in print production, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.36	0.18	0.89	0.27	0.52
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	0.10	0.28	0.38	0.25	0.43
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.22	0.21	0.31	0.20	0.27
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	—	0.71	0.63	0.57	0.67
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.41	0.25	0.31	0.20	0.31
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.31	0.26	0.34	0.23	0.31
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.26	0.27	0.59	0.20	0.27
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.57	—	0.62	—	0.35
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.29	—	0.30	—	0.35
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.32	—	0.54	—	0.64
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.31	0.88
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.22	0.29
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.68	0.17
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.31	0.66
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A28. Standard errors for table 28: Percentage of public high school graduates concentrating in materials production, by selected characteristics, including special and protected populations status: Various years, 1982–98

		1982	1990	1992	1994	1998
Total	s.e.	0.26	0.24	0.16	0.14	0.22
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	1.44	—	2.91	—	1.75
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	0.68	0.47	0.50	0.18	0.33
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.35	0.40	0.33	0.22	0.08
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.71	0.36	0.37	0.41	0.32
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.31	0.29	0.20	0.20	0.30
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.54	0.51	0.32	0.29	0.47
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.04	0.06	0.06	0.02	0.02
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.76	1.59	—	0.74	0.55
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.28	0.24	—	0.14	0.23
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.24	—	0.15	0.23
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.29	—	0.29	0.07	0.08
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.31	0.23	0.20	0.15	0.23
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A28. Standard errors for table 28: Percentage of public high school graduates concentrating in materials production, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.58	0.60	0.38	0.38	0.91
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	1.37	—	0.06	—	0.17
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.26	0.21	0.18	0.16	0.26
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	2.31	1.97	1.81	0.98	1.41
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.42	0.29	0.17	0.11	0.13
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.30	0.21	0.15	0.15	0.26
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.50	0.55	0.51	0.33	0.47
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.58	—	0.34	—	0.39
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.37	—	0.21	—	0.21
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.47	—	0.31	—	0.56
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.61	0.44
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.19	0.32
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.15	0.26
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.34	0.65
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table A29. **Standard errors for table 29: Percentage of public high school graduates concentrating in other precision production, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.08	0.15	0.05	0.04	0.07
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	0.13	—	1.53	—	—
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	0.55	—	0.13	—	0.07
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.41	0.21	0.07	0.10	0.18
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.29	—	0.12	0.09	—
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.07	0.18	0.05	0.05	0.10
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.15	0.19	0.10	0.08	0.14
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.05	0.17	0.03	0.01	0.03
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.12	—	—	0.36	—
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.08	0.14	—	0.04	0.08
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.15	—	0.04	0.07
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.04	—	0.07	—	0.15
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.09	0.16	0.05	0.04	0.06
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A29. Standard errors for table 29: Percentage of public high school graduates concentrating in other precision production, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.19	0.21	0.22	0.11	0.17
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	—	—	0.07	—	0.14
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.08	0.10	0.06	0.04	0.08
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	0.61	1.96	0.00	0.23	—
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.04	—	0.13	—	0.08
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.09	0.10	0.05	0.04	0.09
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.16	0.31	0.12	0.09	0.16
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.14	—	0.09	—	0.09
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.14	—	0.03	—	0.13
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.06	—	0.13	—	0.14
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.06	0.12
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.06	—
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.05	0.18
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A30. **Standard errors for table 30: Percentage of public high school graduates concentrating in transportation, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.02	0.05	0.01	0.04	0.04
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	0.41	—	—	—	—
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.14	—	—	0.13	—
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.02	—	—	0.06	0.11
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.01	0.07	0.02	0.04	0.04
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.04	0.10	0.02	0.09	0.07
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	—	—	0.01	—	—
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.02	0.05	—	0.04	0.04
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.05	—	0.04	0.04
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.06	—	—	—	—
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.02	0.08	0.02	0.04	0.04
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A30. Standard errors for table 30: Percentage of public high school graduates concentrating in transportation, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.04	—	—	0.10	—
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	0.50	—	—	—	—
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.02	0.06	0.02	0.04	0.05
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	—	—	—	0.49	—
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.01	0.07	0.01	0.03	0.05
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.05	0.03	0.04	0.11	0.07
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.06	—	0.02	—	—
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.00	—	0.02	—	0.06
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.05	—	0.02	—	0.08
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.24	—
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.04	0.06
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.04	—
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A31. Standard errors for table 31: Percentage of public high school graduates concentrating in technology program areas, by selected characteristics, including special and protected populations status: Various years, 1982–98

		1982	1990	1992	1994	1998
Total	s.e.	0.09	0.12	0.15	0.10	0.29
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	—	2.27	—	—	1.17
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	1.13	0.38	0.13	0.27	0.36
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.14	0.22	0.26	0.18	0.49
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.09	0.27	0.38	0.16	0.42
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.11	0.14	0.19	0.12	0.35
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.25	0.17	0.21	0.13	0.34
	weighted n (in 1,000s)	226	1,194	1,074	1,083	1,232
Female	s.e.	0.09	0.14	0.17	0.11	0.32
	weighted n (in 1,000s)	2,361	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.25	—	—	0.41	0.40
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.09	0.12	—	0.10	0.30
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.12	—	0.10	0.29
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.07	0.39	0.48	0.28	0.49
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.10	0.12	0.13	0.10	0.29
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975
Low (less than 2.0)	s.e.	0.19	0.17	0.46	0.16	0.32
	weighted n (in 1,000s)	534	438	295	306	186

See notes at end of table.

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Table A31. Standard errors for table 31: Percentage of public high school graduates concentrating in technology program areas, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Academic coursework completed						
All high	s.e.	0.00	0.44	0.46	0.24	0.51
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.09	0.12	0.16	0.10	0.31
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	0.48	—	0.20	0.37	—
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.22	0.37	0.42	0.29	0.52
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.10	0.14	0.19	0.12	0.28
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.15	0.14	0.19	0.12	0.31
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.12	—	0.41	—	0.37
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.16	—	0.21	—	0.44
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.10	—	0.19	—	0.54
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.31	0.62
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.10	0.34
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.32	0.85
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.16	0.41
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A32. Standard errors for table 32: Percentage of public high school graduates concentrating in computer technology, by selected characteristics, including special and protected populations status: Various years, 1982–98

		1982	1990	1992	1994	1998
Total	s.e.	0.07	0.06	0.08	0.06	0.18
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	—	—	—	—	0.76
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	1.13	0.36	0.11	—	0.23
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.13	0.17	0.26	0.09	0.23
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.03	—	0.35	0.04	0.17
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.08	0.08	0.08	0.08	0.25
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.12	0.10	0.12	0.09	0.14
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.07	0.06	0.09	0.05	0.24
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.13	—	—	0.27	0.35
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.07	0.06	—	0.06	0.18
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.06	—	0.06	0.18
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.05	0.13	0.22	0.11	0.27
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.07	0.07	0.08	0.08	0.18
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A32. Standard errors for table 32: Percentage of public high school graduates concentrating in computer technology, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.14	0.11	0.17	0.10	0.22
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	0.00	0.15	0.15	0.10	0.22
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.07	0.07	0.09	0.07	0.21
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	0.14	—	0.11	—	—
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.19	0.29	0.26	0.14	0.38
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.08	0.07	0.09	0.09	0.13
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.10	0.09	0.15	0.06	0.23
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.06	—	0.17	—	0.09
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.12	—	0.11	—	0.17
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.09	—	0.13	—	0.49
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.11	0.30
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.04	0.30
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.31	0.09
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.08	0.13
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A33. **Standard errors for table 33: Percentage of public high school graduates concentrating in communications technology, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.04	0.05	0.05	0.06	0.12
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	—	—	0.04	0.15	0.22
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.04	0.09	0.07	0.10	0.14
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.07	0.12	0.06	0.10	0.12
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.05	0.06	0.06	0.07	0.16
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.07	0.06	0.06	0.06	0.14
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.03	0.06	0.07	0.09	0.15
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	—	—	—	0.21	0.24
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.04	0.05	—	0.06	0.12
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.05	—	0.06	0.12
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.05	0.12	0.15	0.20	0.29
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.05	0.07	0.06	0.06	0.12
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A33. Standard errors for table 33: Percentage of public high school graduates concentrating in communications technology, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.05	—	0	0.06	—
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	—	0.13	0.16	0.21	0.31
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.04	0.05	0.05	0.05	0.11
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	0.46	—	0.17	—	—
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.10	0.17	0.14	0.20	0.25
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.06	0.06	0.06	0.06	0.13
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.06	0.06	0.07	0.09	0.13
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.06	—	0.11	—	0.19
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.07	—	0.07	—	0.25
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.04	—	0.07	—	0.19
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.10	0.30
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.09	0.11
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.13	0.51
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.10	0.21
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A34. **Standard errors for table 34: Percentage of public high school graduates concentrating in other technologies, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.03	0.02	0.06	0.02	0.06
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	—	—	—	—	0.25
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	—	—	—	0.10	—
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.05	—	0.14	—	0.14
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.04	0.03	0.08	0.02	0.07
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.06	0.04	0.10	0.03	0.13
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	—	—	0.04	0.02	—
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.22	—	—	—	—
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.03	0.02	—	0.02	0.06
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.02	—	0.02	0.06
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	—	—	0.27	—	—
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.03	0.02	0.04	0.03	0.08
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A34. Standard errors for table 34: Percentage of public high school graduates concentrating in other technologies, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.12	—	0.12	—	—
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	—	—	0.37	—	—
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.03	0.03	0.04	0.02	0.07
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	—	—	0.25	—	0.04
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.03	0.04	0.08	0.03	0.08
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.07	—	0.05	—	—
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.03	—	0.15	—	0.12
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.05	—	0.11	—	0.13
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.05	—	0.01	—	—
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.23	—
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.02	0.05
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	—	0.28
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	—	0.17
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A35. **Standard errors for table 35: Percentage of public high school graduates concentrating in food service and hospitality, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.06	0.12	0.10	0.07	0.10
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	0.81	—	2.07	—	—
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	—	—	0.05	—	0.12
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.22	0.59	0.64	0.24	0.47
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.16	0.23	0.46	0.23	0.09
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.06	0.08	0.05	0.06	0.08
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.08	0.19	0.14	0.09	0.10
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.09	0.08	0.13	0.08	0.13
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.39	1.17	—	0.58	0.46
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.05	0.11	—	0.06	0.10
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.12	—	0.07	0.10
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	—	—	—	0.05	—
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.08	0.09	0.10	0.08	0.10
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A35. **Standard errors for table 35: Percentage of public high school graduates concentrating in food service and hospitality, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued**

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.09	0.43	0.45	0.22	0.44
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	—	—	—	—	0.09
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.06	0.09	0.10	0.06	0.11
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	0.81	1.13	0.82	0.88	1.14
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	—	—	—	—	0.10
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.07	0.05	0.06	0.05	0.12
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.12	0.37	0.36	0.23	0.18
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.20	—	0.20	—	0.21
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.07	—	0.18	—	0.16
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.09	—	0.12	—	0.10
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.12	0.06
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.10	0.13
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.21	0.20
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.20	0.29
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A36. **Standard errors for table 36: Percentage of public high school graduates concentrating in child care and education, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.05	0.05	0.07	0.11	0.10
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	0.48	—	—	—	—
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	—	—	—	—	0.05
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.16	0.18	0.21	0.45	0.13
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.09	—	0.10	0.20	0.16
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.06	0.06	0.09	0.10	0.12
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.03	—	0.05	0.02	0.03
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.09	0.10	0.11	0.20	0.19
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.27	0.45	—	0.34	0.43
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.05	0.05	—	0.11	0.10
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.05	—	0.11	0.10
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.02	—	0.13	0.07	0.06
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.06	0.06	0.08	0.11	0.12
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A36. Standard errors for table 36: Percentage of public high school graduates concentrating in child care and education, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.12	0.10	0.20	0.29	0.23
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	—	—	—	0.05	0.09
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.05	0.06	0.08	0.13	0.12
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	0.64	0.16	0.77	0.79	—
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	—	0.07	0.06	0.05	0.13
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.07	0.06	0.09	0.13	0.15
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.09	0.12	0.15	0.20	0.16
	weighted n (in 1,000s)	1,028	69[illegible]	526	504	447
School urbanicity						
Urban	s.e.	0.17	—	0.10	—	0.20
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.06	—	0.12	—	0.13
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.09	—	0.11	—	0.17
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.69	0.16
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.12	0.12
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.25	0.25
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.24	0.36
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A37. Standard errors for table 37: Percentage of public high school graduates concentrating in personal and other services, by selected characteristics, including special and protected populations status: Various years, 1982–98

		1982	1990	1992	1994	1998
Total	s.e.	0.20	0.17	0.25	0.15	0.11
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	0.44	—	1.28	—	—
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	0.23	—	0.05	0.14	—
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.47	0.47	1.12	0.34	0.33
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.37	0.74	0.86	0.51	0.39
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.26	0.19	0.26	0.18	0.12
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.20	0.05	0.19	0.07	0.06
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.35	0.30	0.39	0.25	0.21
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.40	1.06	—	0.52	0.92
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.22	0.16	—	0.14	0.12
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	2.51	—	1.58	—
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.16	—	0.15	0.11
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.17	0.11	—	0.06	0.15
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.22	0.19	0.31	0.17	0.12
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A37. Standard errors for table 37: Percentage of public high school graduates concentrating in personal and other services, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.69	0.34	0.47	0.29	0.31
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	—	—	—	0.12	0.31
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.21	0.19	0.29	0.18	0.11
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	0.69	0.78	1.63	0.48	1.12
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.32	0.13	0.29	0.14	0.09
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.35	0.21	0.33	0.11	0.15
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.23	0.31	0.37	0.48	0.32
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.76	—	0.29	—	0.24
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.26	—	0.45	—	0.20
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.21	—	0.40	—	0.11
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.49	0.69
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.23	0.13
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.16	0.34
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.33	0.34
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A38. **Standard errors for table 38: Percentage distribution of public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	†	†	†	†	†
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	0.21	0.17	0.20	0.25	0.12
	weighted n (in 1,000s)	2,581	2,415	2,167	2,085	2,617
Asian/Pacific Islander	s.e.	0.16	0.21	0.32	0.19	0.23
	weighted n (in 1,000s)	2,581	2,415	2,167	2,085	2,617
Black, non-Hispanic	s.e.	0.65	0.40	0.87	0.37	0.34
	weighted n (in 1,000s)	2,581	2,415	2,167	2,085	2,617
Hispanic	s.e.	0.43	0.24	0.83	0.58	0.30
	weighted n (in 1,000s)	2,581	2,415	2,167	2,085	2,617
White, non-Hispanic	s.e.	0.84	0.51	1.24	0.63	0.50
	weighted n (in 1,000s)	2,581	2,415	2,167	2,085	2,617
Other	s.e.	—	—	—	—	0.10
	weighted n (in 1,000s)	—	—	—	—	2,617
Sex						
Male	s.e.	0.53	0.53	0.89	0.42	0.44
	weighted n (in 1,000s)	2,607	2,503	2,174	2,209	2,579
Female	s.e.	0.53	0.53	0.89	0.42	0.44
	weighted n (in 1,000s)	2,607	2,503	2,174	2,209	2,579
Disability status (grade 12)						
Has disability	s.e.	0.39	0.25	—	0.22	0.21
	weighted n (in 1,000s)	2,587	2,505	—	2,213	2,617
No indicated disability	s.e.	0.39	0.25	—	0.22	0.21
	weighted n (in 1,000s)	2,587	2,505	—	2,213	2,617
English proficiency (grade 12)						
Limited	s.e.	—	0.11	—	0.20	0.10
	weighted n (in 1,000s)	—	2,505	—	2,213	2,617
Proficient	s.e.	—	0.11	—	0.20	0.10
	weighted n (in 1,000s)	—	2,505	—	2,213	2,617
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.45	0.36	0.49	0.56	0.52
	weighted n (in 1,000s)	2,606	2,505	2,173	2,213	2,617
Mid-level (2.0 to 3.5)	s.e.	0.69	0.47	0.72	0.51	0.93
	weighted n (in 1,000s)	2,606	2,505	2,173	2,213	2,617
Low (less than 2.0)	s.e.	0.65	0.58	0.65	0.52	0.97
	weighted n (in 1,000s)	2,606	2,505	2,173	2,213	2,617

See notes at end of table.

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Table A38. **Standard errors for table 38: Percentage distribution of public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued**

		1982	1990	1992	1994	1998
Academic coursework completed						
All high	s.e.	0.32	0.75	0.68	0.76	0.93
	weighted n (in 1,000s)	2,602	2,489	2,164	2,195	2,585
Mid-level or mixed	s.e.	0.42	0.84	0.72	0.77	0.93
	weighted n (in 1,000s)	2,602	2,489	2,164	2,195	2,585
All low	s.e.	0.29	0.56	0.31	0.19	0.36
	weighted n (in 1,000s)	2,602	2,489	2,164	2,195	2,585
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.48	0.78	0.69	0.96	1.14
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Mid-level (prealgebra or algebra 1)	s.e.	0.95	1.32	0.95	1.30	1.32
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Low (no or low mathematics)	s.e.	0.93	1.42	0.85	0.94	0.96
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
School urbanicity						
Urban	s.e.	1.35	—	1.56	—	2.37
	weighted n (in 1,000s)	2,607	—	2,174	—	2,617
Suburban	s.e.	1.69	—	1.94	—	2.71
	weighted n (in 1,000s)	2,607	—	2,174	—	2,617
Rural	s.e.	1.45	—	1.86	—	2.23
	weighted n (in 1,000s)	2,607	—	2,174	—	2,617
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	1.44	1.72
	weighted n (in 1,000s)	—	—	—	2,213	2,617
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	3.46	3.83
	weighted n (in 1,000s)	—	—	—	2,213	2,617
Low (5 percent or less in NSLP)	s.e.	—	—	—	2.88	2.75
	weighted n (in 1,000s)	—	—	—	2,213	2,617
Not reported	s.e.	—	—	—	2.68	2.57
	weighted n (in 1,000s)	—	—	—	2,213	2,617

—Not available.

†Not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table A39. **Standard errors for table 39: Percentage distribution of occupational concentrators, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	†	†	†	†	†
	weighted n (in 1,000s)	878	696	542	562	654
Race/ethnicity						
American Indian/Alaska Native	s.e.	0.47	0.22	0.33	0.26	0.14
	weighted n (in 1,000s)	867	674	540	528	654
Asian/Pacific Islander	s.e.	0.16	0.55	0.72	0.41	0.29
	weighted n (in 1,000s)	867	674	540	528	654
Black, non-Hispanic	s.e.	0.91	1.32	1.09	1.01	0.80
	weighted n (in 1,000s)	867	674	540	528	654
Hispanic	s.e.	0.76	0.72	1.15	1.30	0.74
	weighted n (in 1,000s)	867	674	540	528	654
White, non-Hispanic	s.e.	1.24	1.63	1.70	1.60	1.27
	weighted n (in 1,000s)	867	674	540	528	654
Sex						
Male	s.e.	1.16	1.37	1.44	1.07	1.51
	weighted n (in 1,000s)	878	695	542	562	645
Female	s.e.	1.16	1.37	1.44	1.07	1.51
	weighted n (in 1,000s)	878	695	542	562	645
Disability status (grade 12)						
Has disability	s.e.	0.56	0.53	—	0.51	0.33
	weighted n (in 1,000s)	869	696	—	562	654
No indicated disability	s.e.	0.56	0.53	—	0.51	0.33
	weighted n (in 1,000s)	869	696	—	562	654
English proficiency (grade 12)						
Limited	s.e.	—	0.10	—	0.26	0.07
	weighted n (in 1,000s)	—	696	—	562	654
Proficient	s.e.	—	0.10	—	0.26	0.07
	weighted n (in 1,000s)	—	696	—	562	654
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.55	0.37	0.44	1.02	0.85
	weighted n (in 1,000s)	878	696	542	562	654
Mid-level (2.0 to 3.5)	s.e.	1.13	0.95	1.17	0.98	1.00
	weighted n (in 1,000s)	878	696	542	562	654
Low (less than 2.0)	s.e.	1.07	1.05	1.18	0.75	0.87
	weighted n (in 1,000s)	878	696	542	562	654

See notes at end of table.

Table A39. Standard errors for table 39: Percentage distribution of occupational concentrators, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Academic coursework completed						
All high	s.e.	0.18	0.46	0.50	0.52	1.03
	weighted n (in 1,000s)	875	688	535	554	644
Mid-level or mixed	s.e.	0.56	1.31	0.90	0.74	1.06
	weighted n (in 1,000s)	875	688	535	554	644
All low	s.e.	0.54	1.27	0.80	0.50	0.68
	weighted n (in 1,000s)	875	688	535	554	644
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.52	0.69	0.64	0.62	1.78
	weighted n (in 1,000s)	878	696	542	562	654
Mid-level (prealgebra or algebra 1)	s.e.	1.37	1.84	1.46	1.63	1.77
	weighted n (in 1,000s)	878	696	542	562	654
Low (no or low mathematics)	s.e.	1.36	2.04	1.50	1.62	1.32
	weighted n (in 1,000s)	878	696	542	562	654
School urbanicity						
Urban	s.e.	1.59	—	1.76	—	3.02
	weighted n (in 1,000s)	878	—	542	—	654
Suburban	s.e.	2.07	—	2.39	—	3.23
	weighted n (in 1,000s)	878	—	542	—	654
Rural	s.e.	1.91	—	2.52	—	3.06
	weighted n (in 1,000s)	878	—	542	—	654
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	1.85	2.26
	weighted n (in 1,000s)	—	—	—	562	654
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	3.73	4.51
	weighted n (in 1,000s)	—	—	—	562	654
Low (5 percent or less in NSLP)	s.e.	—	—	—	2.45	2.95
	weighted n (in 1,000s)	—	—	—	562	654
Not reported	s.e.	—	—	—	3.14	3.07
	weighted n (in 1,000s)	—	—	—	562	654

—Not available.

†Not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A40. **Standard errors for table 40: Percentage distribution of public high school graduates earning 3.0 or more occupational credits, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	†	†	†	†	†
	weighted n (in 1,000s)	1,205	1,076	918	928	1,147
Race/ethnicity						
American Indian/Alaska Native	s.e.	0.37	0.20	0.27	0.31	0.12
	weighted n (in 1,000s)	1,192	1,042	914	877	1,147
Asian/Pacific Islander	s.e.	0.18	0.51	0.53	0.39	0.17
	weighted n (in 1,000s)	1,192	1,042	914	877	1,147
Black, non-Hispanic	s.e.	0.82	1.15	0.90	0.80	0.72
	weighted n (in 1,000s)	1,192	1,042	914	877	1,147
Hispanic	s.e.	0.62	0.49	1.06	1.00	0.58
	weighted n (in 1,000s)	1,192	1,042	914	877	1,147
White, non-Hispanic	s.e.	1.11	1.26	1.54	1.17	0.99
	weighted n (in 1,000s)	1,192	1,042	914	877	1,147
Sex						
Male	s.e.	0.94	1.00	1.11	0.68	0.97
	weighted n (in 1,000s)	1,205	1,076	918	927	1,134
Female	s.e.	0.94	1.00	1.11	0.68	0.97
	weighted n (in 1,000s)	1,205	1,076	918	927	1,134
Disability status (grade 12)						
Has disability	s.e.	0.53	0.39	—	0.37	0.31
	weighted n (in 1,000s)	1,196	1,076	—	928	1,147
No indicated disability	s.e.	0.53	0.39	—	0.37	0.31
	weighted n (in 1,000s)	1,196	1,076	—	928	1,147
English proficiency (grade 12)						
Limited	s.e.	—	0.08	—	0.21	0.09
	weighted n (in 1,000s)	—	1,076	—	928	1,147
Proficient	s.e.	—	0.08	—	0.21	0.09
	weighted n (in 1,000s)	—	1,076	—	928	1,147
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.50	0.42	0.40	0.84	0.68
	weighted n (in 1,000s)	1,205	1,076	917	928	1,147
Mid-level (2.0 to 3.5)	s.e.	0.96	0.78	0.97	0.74	0.95
	weighted n (in 1,000s)	1,205	1,076	917	928	1,147

See notes at end of table.

Table A40. **Standard errors for table 40: Percentage distribution of public high school graduates earning 3.0 or more occupational credits, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued**

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.91	0.86	1.00	0.66	0.92
	weighted n (in 1,000s)	1,205	1,076	917	928	1,147
Academic coursework completed						
All high	s.e.	0.24	0.56	0.59	0.53	1.03
	weighted n (in 1,000s)	1,202	1,066	910	918	1,132
Mid-level or mixed	s.e.	0.53	1.10	0.80	0.63	1.07
	weighted n (in 1,000s)	1,202	1,066	910	918	1,132
All low	s.e.	0.47	1.00	0.59	0.38	0.55
	weighted n (in 1,000s)	1,202	1,066	910	918	1,132
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.50	0.63	0.61	0.69	1.23
	weighted n (in 1,000s)	1,205	1,076	918	928	1,147
Mid-level (prealgebra or algebra 1)	s.e.	1.22	1.58	1.20	1.40	1.33
	weighted n (in 1,000s)	1,205	1,076	918	928	1,147
Low (no or low mathematics)	s.e.	1.21	1.71	1.17	1.30	1.17
	weighted n (in 1,000s)	1,205	1,076	918	928	1,147
School urbanicity						
Urban	s.e.	1.46	—	1.71	—	2.71
	weighted n (in 1,000s)	1,205	—	918	—	1,147
Suburban	s.e.	1.93	—	2.18	—	3.08
	weighted n (in 1,000s)	1,205	—	918	—	1,147
Rural	s.e.	1.76	—	2.27	—	2.93
	weighted n (in 1,000s)	1,205	—	918	—	1,147
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	1.69	2.46
	weighted n (in 1,000s)	—	—	—	928	1,147
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	3.55	4.14
	weighted n (in 1,000s)	—	—	—	928	1,147
Low (5 percent or less in NSLP)	s.e.	—	—	—	2.49	2.70
	weighted n (in 1,000s)	—	—	—	928	1,147
Not reported	s.e.	—	—	—	3.07	2.91
	weighted n (in 1,000s)	—	—	—	928	1,147

—Not available.

†Not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A41. Standard errors for table 41: Average number of computer-related credits earned by public high school graduates in computer-related areas, by selected characteristics, including special and protected populations status: 1998

						Computer technology						
		Total	Basic type-writing/key-boarding	Technology education	Business services	Total	Appli-cations	Program-ming	Data pro-cessing	Science/ systems	Mathe-matics	Drafting/ graphics
Total	s.e.	0.029	0.018	0.009	0.024	0.027	0.021	0.005	0.003	0.012	0.005	0.007
	weighted n (in 1,000s	2,617	2,617	2,617	2,617	2,617	2,617	2,617	2,617	2,617	2,617	2,617
Race/ethnicity												
American Indian/ Alaska Native	s.e.	0.067	0.026	0.014	0.039	0.059	0.039	0.013	0.014	0.023	0.015	0.015
	weighted n (in 1,000s	12	12	12	12	12	12	12	12	12	12	12
Asian/Pacific Islander	s.e.	0.041	0.048	0.007	0.026	0.059	0.029	0.014	0.013	0.021	0.009	0.009
	weighted n (in 1,000s	92	92	92	92	92	92	92	92	92	92	92
Black, non-Hispanic	s.e.	0.064	0.033	0.017	0.056	0.032	0.021	0.008	0.005	0.014	0.009	0.009
	weighted n (in 1,000s	356	356	356	356	356	356	356	356	356	356	356
Hispanic	s.e.	0.039	0.031	0.010	0.030	0.040	0.032	0.008	0.004	0.016	0.009	0.010
	weighted n (in 1,000s	299	299	299	299	299	299	299	299	299	299	299
White, non-Hispanic	s.e.	0.033	0.019	0.010	0.025	0.033	0.026	0.006	0.003	0.015	0.005	0.009
	weighted n (in 1,000s	1,852	1,852	1,852	1,852	1,852	1,852	1,852	1,852	1,852	1,852	1,852
Sex												
Male	s.e.	0.028	0.016	0.014	0.022	0.026	0.018	0.007	0.002	0.012	0.004	0.011
	weighted n (in 1,000s	1,232	1,232	1,232	1,232	1,232	1,232	1,232	1,232	1,232	1,232	1,232
Female	s.e.	0.034	0.020	0.006	0.026	0.030	0.025	0.004	0.004	0.012	0.006	0.004
	weighted n (in 1,000s	1,347	1,347	1,347	1,347	1,347	1,347	1,347	1,347	1,347	1,347	1,347
Disability status (grade 12)												
Has disability	s.e.	0.037	0.022	0.014	0.028	0.031	0.023	0.006	0.014	0.018	0.003	0.010
	weighted n (in 1,000s	74	74	74	74	74	74	74	74	74	74	74
No indicated disability	s.e.	0.029	0.018	0.009	0.024	0.027	0.021	0.005	0.003	0.012	0.005	0.007
	weighted n (in 1,000s	2,543	2,543	2,543	2,543	2,543	2,543	2,543	2,543	2,543	2,543	2,543

See notes at end of table.

Table A41. Standard errors for table 41: Average number of computer-related credits earned by public high school graduates in computer-related areas, by selected characteristics, including special and protected populations status: 1998—Continued

						Computer technology						
		Total	Basic typewriting/keyboarding	Technology education	Business services	Total	Applications	Programming	Data processing	Science/systems	Mathematics	Drafting/graphics
English proficiency (grade 12)												
Limited	s.e.	0.067	0.051	0.025	0.042	0.054	0.031	0.020	0.002	0.033	0.010	0.012
	weighted n (in 1,000s	19	19	19	19	19	19	19	19	19	19	19
Proficient	s.e.	0.029	0.018	0.009	0.024	0.027	0.021	0.005	0.003	0.012	0.005	0.007
	weighted n (in 1,000s	2,598	2,598	2,598	2,598	2,598	2,598	2,598	2,598	2,598	2,598	2,598
Grade-point average (GPA)												
High (greater than 3.5)	s.e.	0.048	0.022	0.009	0.031	0.038	0.031	0.006	0.003	0.015	0.007	0.008
	weighted n (in 1,000s	456	456	456	456	456	456	456	456	456	456	456
Mid-level (2.0 to 3.5)	s.e.	0.029	0.019	0.009	0.024	0.027	0.019	0.005	0.004	0.012	0.005	0.007
	weighted n (in 1,000s	1,975	1,975	1,975	1,975	1,975	1,975	1,975	1,975	1,975	1,975	1,975
Low (less than 2.0)	s.e.	0.039	0.022	0.013	0.034	0.029	0.018	0.008	0.005	0.020	0.004	0.024
	weighted n (in 1,000s	186	186	186	186	186	186	186	186	186	186	186
Academic coursework completed												
All high	s.e.	0.055	0.023	0.005	0.042	0.031	0.022	0.012	0.002	0.014	0.015	0.008
	weighted n (in 1,000s	386	386	386	386	386	386	386	386	386	386	386
Mid-level or mixed	s.e.	0.029	0.019	0.010	0.023	0.030	0.023	0.005	0.003	0.014	0.005	0.008
	weighted n (in 1,000s	2,141	2,141	2,141	2,141	2,141	2,141	2,141	2,141	2,141	2,141	2,141
All low	s.e.	0.060	0.042	0.011	0.051	0.034	0.013	0.006	0.004	0.022	0.008	0.017
	weighted n (in 1,000s	58	58	58	58	58	58	58	58	58	58	58
Grade 9 mathematics												
High (geometry or higher)	s.e.	0.045	0.021	0.007	0.033	0.043	0.033	0.008	0.002	0.013	0.013	0.009
	weighted n (in 1,000s	534	534	534	534	534	534	534	534	534	534	534

See notes at end of table.

Table A41. Standard errors for table 41: Average number of computer-related credits earned by public high school graduates in computer-related areas, by selected characteristics, including special and protected populations status: 1998—Continued

						Computer technology						
		Total	Basic type-writing/key-boarding	Technology education	Business services	Total	Appli-cations	Program-ming	Data pro-cessing	Science/ systems	Mathe-matics	Drafting/ graphics
Mid-level (prealgebra or algebra 1)	s.e.	0.031	0.020	0.009	0.026	0.026	0.020	0.005	0.004	0.012	0.004	0.007
	weighted n (in 1,000s	1,635	1,635	1,635	1,635	1,635	1,635	1,635	1,635	1,635	1,635	1,635
Low (no or low mathematics)	s.e.	0.033	0.018	0.013	0.017	0.030	0.019	0.008	0.004	0.017	0.006	0.013
	weighted n (in 1,000s	447	447	447	447	447	447	447	447	447	447	447
School urbanicity												
Urban	s.e.	0.053	0.028	0.018	0.051	0.041	0.024	0.007	0.010	0.020	0.013	0.012
	weighted n (in 1,000s	743	743	743	743	743	743	743	743	743	743	743
Suburban	s.e.	0.044	0.025	0.009	0.028	0.023	0.017	0.009	0.002	0.014	0.005	0.014
	weighted n (in 1,000s	1,028	1,028	1,028	1,028	1,028	1,028	1,028	1,028	1,028	1,028	1,028
Rural	s.e.	0.047	0.041	0.018	0.039	0.062	0.053	0.007	0.003	0.026	0.008	0.012
	weighted n (in 1,000s	846	846	846	846	846	846	846	846	846	846	846
School poverty level												
High (greater than 50 percent in NSLP)	s.e.	0.083	0.041	0.032	0.059	0.058	0.042	0.012	0.027	0.027	0.005	0.012
	weighted n (in 1,000s	240	240	240	240	240	240	240	240	240	240	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	0.039	0.025	0.010	0.029	0.037	0.032	0.006	0.002	0.017	0.008	0.009
	weighted n (in 1,000s	1,565	1,565	1,565	1,565	1,565	1,565	1,565	1,565	1,565	1,565	1,565
Low (5 percent or less in NSLP)	s.e.	0.044	0.045	0.016	0.059	0.020	0.014	0.013	0.002	0.018	0.002	0.010
	weighted n (in 1,000s	425	425	425	425	425	425	425	425	425	425	425
Not reported	s.e.	0.079	0.045	0.015	0.054	0.045	0.037	0.011	0.007	0.027	0.001	0.029
	weighted n (in 1,000s	386	386	386	386	386	386	386	386	386	386	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Transcript Study (HSTS), 1998.

Table A42. **Standard errors for table 42: Average number of computer-related credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	†	0.027	0.019	0.025	0.029
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	†	0.111	0.082	0.172	0.067
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	†	0.046	0.049	0.049	0.041
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	†	0.062	0.048	0.045	0.064
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	†	0.060	0.067	0.050	0.039
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	†	0.026	0.021	0.027	0.033
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	†	0.024	0.024	0.030	0.028
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	†	0.035	0.024	0.026	0.034
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	†	0.048	—	0.055	0.037
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	†	0.027	—	0.025	0.029
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	0.156	—	0.108	0.067
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.027	—	0.025	0.029
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	†	0.038	0.039	0.028	0.048
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	†	0.028	0.021	0.026	0.029
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A42. **Standard errors for table 42: Average number of computer-related credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued**

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	†	0.030	0.037	0.031	0.039
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	†	0.047	0.040	0.031	0.055
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	†	0.027	0.020	0.027	0.029
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	†	0.044	0.055	0.060	0.060
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	†	0.049	0.046	0.036	0.045
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	†	0.031	0.022	0.027	0.031
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	†	0.029	0.030	0.028	0.033
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	†	—	0.039	—	0.053
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	†	—	0.026	—	0.044
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	†	—	0.031	—	0.047
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.074	0.083
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.032	0.039
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.074	0.044
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.049	0.079
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

†Not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A43. **Standard errors for table 43: Average number of typewriting/keyboarding credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	†	0.016	0.011	0.016	0.018
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	†	0.074	0.047	0.101	0.026
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	†	0.019	0.024	0.032	0.048
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	†	0.029	0.024	0.039	0.033
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	†	0.037	0.036	0.030	0.031
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	†	0.018	0.013	0.018	0.019
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	†	0.014	0.014	0.014	0.016
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	†	0.019	0.014	0.019	0.020
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	†	0.030	—	0.023	0.022
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	†	0.016	—	0.016	0.018
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	0.093	—	0.062	0.051
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.016	—	0.016	0.018
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	†	0.023	0.021	0.018	0.022
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	†	0.017	0.012	0.017	0.019
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975
Low (less than 2.0)	s.e.	†	0.016	0.019	0.019	0.022
	weighted n (in 1,000s)	534	438	295	306	186

See notes at end of table.

Table A43. Standard errors for table 43: Average number of typewriting/keyboarding credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Academic coursework completed						
All high	s.e.	†	0.022	0.021	0.020	0.023
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	†	0.017	0.012	0.017	0.019
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	†	0.018	0.038	0.038	0.042
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	†	0.022	0.023	0.022	0.021
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	†	0.018	0.014	0.018	0.020
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	†	0.020	0.015	0.017	0.018
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	†	—	0.021	—	0.028
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	†	—	0.018	—	0.025
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	†	—	0.019	—	0.041
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.067	0.041
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.023	0.025
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.038	0.045
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.045	0.045
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

†Not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table A44. **Standard errors for table 44: Average number of computer-related business services credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.002	0.016	0.012	0.019	0.024
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	0.007	0.093	0.050	0.149	0.039
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	0.007	0.025	0.046	0.030	0.026
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.008	0.035	0.023	0.040	0.056
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.003	0.040	0.038	0.046	0.030
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.002	0.017	0.013	0.021	0.025
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.003	0.015	0.013	0.016	0.022
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.003	0.021	0.016	0.024	0.026
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.005	0.019	—	0.025	0.028
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.002	0.016	—	0.019	0.024
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	0.102	—	0.038	0.042
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.016	—	0.019	0.024
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.012	0.017	0.019	0.025	0.031
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.002	0.017	0.013	0.020	0.024
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975
Low (less than 2.0)	s.e.	0.003	0.022	0.029	0.023	0.034
	weighted n (in 1,000s)	534	438	295	306	186

See notes at end of table.

Table A44. Standard errors for table 44: Average number of computer-related business services credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Academic coursework completed						
All high	s.e.	0.023	0.024	0.025	0.034	0.042
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.002	0.017	0.012	0.018	0.023
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	0.009	0.037	0.026	0.037	0.051
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.004	0.022	0.028	0.031	0.033
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.003	0.019	0.013	0.021	0.026
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.003	0.021	0.021	0.020	0.017
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.006	—	0.022	—	0.051
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.002	—	0.016	—	0.028
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.004	—	0.021	—	0.039
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.046	0.059
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.024	0.029
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.071	0.059
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.050	0.054
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A45. **Standard errors for table 45: Average number of computer technology credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.007	0.013	0.011	0.013	0.027
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	0.019	0.078	0.051	0.071	0.059
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	0.050	0.035	0.037	0.033	0.059
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.013	0.035	0.037	0.020	0.032
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.007	0.036	0.035	0.026	0.040
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.009	0.014	0.012	0.016	0.033
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.011	0.015	0.015	0.015	0.026
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.007	0.012	0.014	0.012	0.030
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.013	0.026	—	0.020	0.031
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.007	0.013	—	0.013	0.027
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	0.056	—	0.040	0.054
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.013	—	0.013	0.027
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.023	0.027	0.025	0.018	0.038
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.008	0.014	0.012	0.013	0.027
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975
Low (less than 2.0)	s.e.	0.010	0.012	0.023	0.015	0.029
	weighted n (in 1,000s)	534	438	295	306	186

See notes at end of table.

Table A45. **Standard errors for table 45: Average number of computer technology credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued**

		1982	1990	1992	1994	1998
Academic coursework completed						
All high	s.e.	0.013	0.031	0.027	0.019	0.031
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.007	0.012	0.012	0.014	0.030
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	0.014	0.030	0.025	0.018	0.034
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.024	0.028	0.031	0.023	0.043
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.010	0.015	0.013	0.015	0.026
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.007	0.016	0.015	0.011	0.030
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.014	0.041	0.024	0.023	0.041
	weighted n (in 1,000s)	501	312	484	303	743
Suburban	s.e.	0.010	0.024	0.016	0.021	0.023
	weighted n (in 1,000s)	1,261	949	961	918	1,028
Rural	s.e.	0.013	0.018	0.019	0.022	0.062
	weighted n (in 1,000s)	845	1,245	729	991	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.033	0.058
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.019	0.037
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.040	0.020
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.021	0.045
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

#Rounds to zero.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A46. Standard errors for table 46: Average number of total credits earned in high school by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98

		1982	1990	1992	1994	1998
Total	s.e.	0.080	0.127	0.094	0.144	0.162
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	0.302	0.267	0.341	0.541	0.350
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	0.215	0.236	0.202	0.256	0.195
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.159	0.255	0.312	0.132	0.250
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.121	0.210	0.229	0.131	0.222
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.094	0.133	0.102	0.183	0.178
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.098	0.130	0.121	0.146	0.163
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.089	0.132	0.100	0.147	0.166
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.130	0.228	—	0.265	0.269
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.083	0.128	—	0.143	0.162
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	0.400	—	0.452	0.344
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.127	—	0.145	0.162
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.288	0.137	0.110	0.191	0.183
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.084	0.127	0.103	0.142	0.157
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A46. Standard errors for table 46: Average number of total credits earned in high school by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.120	0.167	0.163	0.169	0.167
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	0.351	0.172	0.151	0.153	0.249
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.081	0.121	0.093	0.156	0.161
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	0.188	0.267	0.466	0.203	0.362
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.148	0.177	0.183	0.185	0.238
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.104	0.120	0.093	0.153	0.177
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.106	0.218	0.154	0.171	0.175
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.157	—	0.196	—	0.356
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.121	—	0.110	—	0.175
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.158	—	0.206	—	0.327
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.258	0.369
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.168	0.238
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.435	0.454
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.348	0.359
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A47. **Standard errors for table 47: Average number of core academic credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.055	0.010	0.056	0.008	0.010
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	0.218	0.335	0.424	0.193	0.144
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	0.158	0.150	0.190	0.210	0.112
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.123	0.140	0.172	0.082	0.137
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.089	0.212	0.099	0.132	0.140
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.065	0.091	0.064	0.076	0.094
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.072	0.083	0.069	0.062	0.081
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.062	0.081	0.065	0.069	0.082
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	0.124	0.201	—	0.123	0.193
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.058	0.076	—	0.064	0.080
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	0.422	—	0.293	0.261
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.078	—	0.063	0.080
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	0.201	0.114	0.081	0.084	0.100
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.060	0.087	0.064	0.063	0.082
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975

See notes at end of table.

Table A47. Standard errors for table 47: Average number of core academic credits earned by public high school graduates, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.098	0.078	0.098	0.095	0.128
	weighted n (in 1,000s)	534	438	295	306	186
Academic coursework completed						
All high	s.e.	0.241	0.094	0.100	0.072	0.099
	weighted n (in 1,000s)	31	273	308	330	386
Mid-level or mixed	s.e.	0.056	0.075	0.055	0.069	0.080
	weighted n (in 1,000s)	2,485	2,098	1,781	1,810	2,141
All low	s.e.	0.142	0.154	0.244	0.131	0.266
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.133	0.110	0.118	0.094	0.121
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	0.074	0.063	0.059	0.066	0.079
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	0.076	0.134	0.082	0.091	0.120
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	0.132	—	0.112	—	0.147
	weighted n (in 1,000s)	501	—	484	—	743
Suburban	s.e.	0.081	—	0.079	—	0.087
	weighted n (in 1,000s)	1,261	—	961	—	1,028
Rural	s.e.	0.101	—	0.118	—	0.158
	weighted n (in 1,000s)	845	—	729	—	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.123	0.182
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.092	0.099
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.206	0.262
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	0.169	0.184
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A48. **Standard errors for table 48: Average number of core academic credits earned by occupational concentrators, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.096	0.081	0.092	0.083	0.132
	weighted n (in 1,000s)	878	696	542	562	654
Race/ethnicity						
American Indian/Alaska Native	s.e.	0.253	0.270	0.346	0.355	0.239
	weighted n (in 1,000s)	14	4	7	4	3
Asian/Pacific Islander	s.e.	0.369	0.272	0.568	0.253	0.251
	weighted n (in 1,000s)	7	14	18	11	15
Black, non-Hispanic	s.e.	0.149	0.155	0.319	0.130	0.286
	weighted n (in 1,000s)	96	95	63	76	97
Hispanic	s.e.	0.139	0.180	0.165	0.213	0.211
	weighted n (in 1,000s)	116	54	50	42	68
White, non-Hispanic	s.e.	0.120	0.098	0.090	0.100	0.128
	weighted n (in 1,000s)	634	506	401	396	469
Sex						
Male	s.e.	0.128	0.096	0.133	0.084	0.112
	weighted n (in 1,000s)	490	386	313	312	378
Female	s.e.	0.116	0.087	0.091	0.107	0.178
	weighted n (in 1,000s)	388	309	230	251	267
Disability status (grade 12)						
Has disability	s.e.	0.176	0.198	—	0.170	0.272
	weighted n (in 1,000s)	71	27	—	34	28
No indicated disability	s.e.	0.103	0.080	—	0.083	0.132
	weighted n (in 1,000s)	798	669	—	528	626
English proficiency (grade 12)						
Limited	s.e.	—	—	—	0.292	—
	weighted n (in 1,000s)	—	2	—	3	2
Proficient	s.e.	—	0.081	—	0.083	0.132
	weighted n (in 1,000s)	—	694	—	559	652
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	1.023	0.181	0.235	0.165	0.133
	weighted n (in 1,000s)	47	29	25	39	68
Mid-level (2.0 to 3.5)	s.e.	0.088	0.088	0.087	0.085	0.136
	weighted n (in 1,000s)	623	505	416	426	520

See notes at end of table.

Table A48. Standard errors for table 48: Average number of core academic credits earned by occupational concentrators, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.131	0.104	0.185	0.135	0.138
	weighted n (in 1,000s)	208	162	101	97	65
Academic coursework completed						
All high	s.e.	—	0.152	0.159	0.142	0.169
	weighted n (in 1,000s)	—	20	25	28	55
Mid-level or mixed	s.e.	0.098	0.076	0.081	0.086	0.117
	weighted n (in 1,000s)	828	609	470	502	565
All low	s.e.	0.183	0.205	0.404	0.164	0.280
	weighted n (in 1,000s)	40	59	41	24	24
Grade 9 mathematics						
High (geometry or higher)	s.e.	0.298	0.277	0.194	0.194	0.319
	weighted n (in 1,000s)	37	32	34	40	93
Mid-level (prealgebra or algebra 1)	s.e.	0.156	0.086	0.102	0.080	0.123
	weighted n (in 1,000s)	417	392	316	337	428
Low (no or low mathematics)	s.e.	0.102	0.108	0.114	0.117	0.177
	weighted n (in 1,000s)	423	272	193	186	132
School urbanicity						
Urban	s.e.	0.163	—	0.170	—	0.322
	weighted n (in 1,000s)	154	—	104	—	171
Suburban	s.e.	0.144	—	0.107	—	0.112
	weighted n (in 1,000s)	401	—	210	—	221
Rural	s.e.	0.179	—	0.185	—	0.185
	weighted n (in 1,000s)	323	—	228	—	262
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	0.164	0.217
	weighted n (in 1,000s)	—	—	—	56	70
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.124	0.173
	weighted n (in 1,000s)	—	—	—	350	420
Low (5 percent or less in NSLP)	s.e.	—	—	—	0.243	0.496
	weighted n (in 1,000s)	—	—	—	60	67
Not reported	s.e.	—	—	—	0.157	0.181
	weighted n (in 1,000s)	—	—	—	97	97

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A49. **Standard errors for table 49: Percentage distribution of public high school graduates who completed both an occupational concentration and college–preparatory coursework, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	†	†	†	†	†
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	0.58	0.34	0.19	0.07	0.10
	weighted n (in 1,000s)	15	69	73	96	169
Asian/Pacific Islander	s.e.	2.37	1.97	2.99	0.57	0.59
	weighted n (in 1,000s)	15	69	73	96	169
Black, non-Hispanic	s.e.	6.80	2.27	2.81	1.73	2.31
	weighted n (in 1,000s)	15	69	73	96	169
Hispanic	s.e.	5.09	1.70	3.48	2.68	1.95
	weighted n (in 1,000s)	15	69	73	96	169
White, non-Hispanic	s.e.	8.47	3.67	4.59	2.73	3.58
	weighted n (in 1,000s)	15	69	73	96	169
Sex						
Male	s.e.	8.04	3.39	3.69	2.03	1.68
	weighted n (in 1,000s)	15	70	73	100	169
Female	s.e.	8.04	3.39	3.69	2.03	1.68
	weighted n (in 1,000s)	15	70	73	100	169
Disability status (grade 12)						
Has disability	s.e.	1.26	0.13	—	0.18	0.18
	weighted n (in 1,000s)	14	70	—	100	169
No indicated disability	s.e.	1.26	0.13	—	0.18	0.18
	weighted n (in 1,000s)	14	70	—	100	169
English proficiency (grade 12)						
Limited	s.e.	—	—	—	0.19	0.09
	weighted n (in 1,000s)	—	70	—	100	169
Proficient	s.e.	—	—	—	0.19	0.09
	weighted n (in 1,000s)	—	70	—	100	169
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	5.91	2.01	2.26	0.38	0.45
	weighted n (in 1,000s)	15	70	73	100	169
Mid-level (2.0 to 3.5)	s.e.	6.37	1.97	2.74	1.76	2.59
	weighted n (in 1,000s)	15	70	73	100	169
Low (less than 2.0)	s.e.	2.79	0.66	1.94	1.86	2.61
	weighted n (in 1,000s)	15	70	73	100	169

See notes at end of table.

Table A49. Standard errors for table 49: Percentage distribution of public high school graduates who completed both an occupational concentration and college–preparatory coursework, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Academic coursework completed						
All high	s.e.	5.31	2.90	2.84	2.07	2.53
	weighted n (in 1,000s)	15	70	73	100	169
Mid-level or mixed	s.e.	5.31	2.90	2.84	2.07	2.53
	weighted n (in 1,000s)	15	70	73	100	169
All low	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	15	70	73	100	169
Grade 9 mathematics						
High (geometry or higher)	s.e.	6.51	2.49	2.89	1.73	4.62
	weighted n (in 1,000s)	15	70	73	100	169
Mid-level (prealgebra or algebra 1)	s.e.	6.58	2.68	3.08	1.72	4.44
	weighted n (in 1,000s)	15	70	73	100	169
Low (no or low mathematics)	s.e.	1.09	1.79	1.01	0.60	0.48
	weighted n (in 1,000s)	15	70	73	100	169
School urbanicity						
Urban	s.e.	7.60	4.27	4.81	2.67	5.30
	weighted n (in 1,000s)	15	70	73	100	169
Suburban	s.e.	9.39	6.37	4.31	4.59	4.61
	weighted n (in 1,000s)	15	70	73	100	169
Rural	s.e.	8.37	6.04	3.92	3.84	5.34
	weighted n (in 1,000s)	15	70	73	100	169
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	2.29	2.48
	weighted n (in 1,000s)	—	—	—	100	169
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	5.21	5.14
	weighted n (in 1,000s)	—	—	—	100	169
Low (5 percent or less in NSLP)	s.e.	—	—	—	4.88	3.24
	weighted n (in 1,000s)	—	—	—	100	169
Not reported	s.e.	—	—	—	3.84	3.98
	weighted n (in 1,000s)	—	—	—	100	169

—Not available.

†Not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table A50. **Standard errors for table 50: Percentage of public high school graduates who completed high-level mathematics courses in grade 9, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.48	0.78	0.69	0.96	1.14
	weighted n (in 1,000s)	2,607	2,505	2,174	2,213	2,617
Race/ethnicity						
American Indian/Alaska Native	s.e.	2.19	4.56	1.35	3.04	4.38
	weighted n (in 1,000s)	30	12	22	17	12
Asian/Pacific Islander	s.e.	2.60	2.63	2.21	2.74	3.88
	weighted n (in 1,000s)	38	86	88	74	92
Black, non-Hispanic	s.e.	0.55	1.09	1.74	0.75	1.93
	weighted n (in 1,000s)	293	347	254	263	356
Hispanic	s.e.	0.47	1.17	1.89	1.56	1.32
	weighted n (in 1,000s)	307	194	207	168	299
White, non-Hispanic	s.e.	0.59	0.86	0.83	1.12	1.33
	weighted n (in 1,000s)	1,913	1,778	1,596	1,564	1,852
Sex						
Male	s.e.	0.58	0.84	0.70	1.00	0.99
	weighted n (in 1,000s)	1,257	1,194	1,074	1,083	1,232
Female	s.e.	0.59	0.81	1.00	1.01	1.23
	weighted n (in 1,000s)	1,350	1,309	1,100	1,126	1,347
Disability status (grade 12)						
Has disability	s.e.	1.09	0.42	—	1.28	0.93
	weighted n (in 1,000s)	226	64	—	82	74
No indicated disability	s.e.	0.51	0.79	—	0.99	1.16
	weighted n (in 1,000s)	2,361	2,441	—	2,130	2,543
English proficiency (grade 12)						
Limited	s.e.	—	2.77	—	2.00	1.33
	weighted n (in 1,000s)	—	13	—	19	19
Proficient	s.e.	—	0.78	—	0.97	1.15
	weighted n (in 1,000s)	—	2,492	—	2,194	2,598
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	2.10	3.34	2.50	2.22	2.32
	weighted n (in 1,000s)	260	258	233	307	456
Mid-level (2.0 to 3.5)	s.e.	0.51	0.67	0.74	0.97	1.06
	weighted n (in 1,000s)	1,812	1,809	1,644	1,600	1,975
Low (less than 2.0)	s.e.	0.52	0.68	0.33	0.45	0.80
	weighted n (in 1,000s)	534	438	295	306	186

See notes at end of table.

Table A50. Standard errors for table 50: Percentage of public high school graduates who completed high-level mathematics courses in grade 9, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued

		1982	1990	1992	1994	1998
Academic coursework completed						
All high	s.e.	3.42	2.86	2.42	2.10	3.35
	weighted n (in 1,000s)	114	273	308	330	386
Mid-level or mixed	s.e.	0.46	0.82	0.47	0.87	1.00
	weighted n (in 1,000s)	2,403	2,098	1,781	1,810	2,141
All low	s.e.	—	—	—	—	1.99
	weighted n (in 1,000s)	86	117	75	55	58
Grade 9 mathematics						
High (geometry or higher)	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	205	266	280	329	534
Mid-level (prealgebra or algebra 1)	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	1,374	1,546	1,369	1,380	1,635
Low (no or low mathematics)	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	1,028	692	526	504	447
School urbanicity						
Urban	s.e.	1.03	2.94	1.83	0.93	2.17
	weighted n (in 1,000s)	501	312	484	303	743
Suburban	s.e.	0.76	0.91	0.98	1.90	1.40
	weighted n (in 1,000s)	1,261	949	961	918	1,028
Rural	s.e.	0.72	1.16	1.00	1.06	1.65
	weighted n (in 1,000s)	845	1,245	729	991	846
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	2.04	1.81
	weighted n (in 1,000s)	—	—	—	185	240
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	1.17	1.48
	weighted n (in 1,000s)	—	—	—	1,296	1,565
Low (5 percent or less in NSLP)	s.e.	—	—	—	3.33	1.81
	weighted n (in 1,000s)	—	—	—	351	425
Not reported	s.e.	—	—	—	1.68	3.96
	weighted n (in 1,000s)	—	—	—	380	386

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

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Table A51. **Standard errors for table 51: Percentage of occupational concentrators who completed high-level mathematics courses in grade 9, by selected characteristics, including special and protected populations status: Various years, 1982–98**

		1982	1990	1992	1994	1998
Total	s.e.	0.52	0.69	0.64	0.62	1.78
	weighted n (in 1,000s)	878	696	542	562	654
Race/ethnicity						
American Indian/Alaska Native	s.e.	—	4.22	—	1.26	5.93
	weighted n (in 1,000s)	14	4	7	4	3
Asian/Pacific Islander	s.e.	5.23	3.04	2.91	3.24	6.40
	weighted n (in 1,000s)	7	14	18	11	15
Black, non-Hispanic	s.e.	0.65	1.78	1.62	1.24	5.26
	weighted n (in 1,000s)	96	95	63	76	97
Hispanic	s.e.	0.67	1.22	1.58	0.97	4.01
	weighted n (in 1,000s)	116	54	50	42	68
White, non-Hispanic	s.e.	0.66	0.72	0.78	0.71	1.25
	weighted n (in 1,000s)	634	506	401	396	469
Sex						
Male	s.e.	0.64	0.71	0.88	0.89	1.27
	weighted n (in 1,000s)	490	386	313	312	378
Female	s.e.	0.79	0.84	0.82	0.68	2.74
	weighted n (in 1,000s)	388	309	230	251	267
Disability status (grade 12)						
Has disability	s.e.	1.74	0.81	—	1.53	1.58
	weighted n (in 1,000s)	71	27	—	34	28
No indicated disability	s.e.	0.53	0.69	—	0.63	1.86
	weighted n (in 1,000s)	798	669	—	528	626
English proficiency (grade 12)						
Limited	s.e.	—	—	—	1.30	—
	weighted n (in 1,000s)	—	2	—	3	2
Proficient	s.e.	—	0.69	—	0.62	1.79
	weighted n (in 1,000s)	—	694	—	559	652
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	4.06	5.05	4.59	3.20	4.08
	weighted n (in 1,000s)	47	29	25	39	68
Mid-level (2.0 to 3.5)	s.e.	0.56	0.72	0.71	0.73	1.82
	weighted n (in 1,000s)	623	505	416	426	520
Low (less than 2.0)	s.e.	0.65	0.66	0.74	0.49	1.19
	weighted n (in 1,000s)	208	162	101	97	65

See notes at end of table.

Table A51. **Standard errors for table 51: Percentage of occupational concentrators who completed high-level mathematics courses in grade 9, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued**

		1982	1990	1992	1994	1998
Academic coursework completed						
All high	s.e.	—	6.95	5.02	4.56	5.03
	weighted n (in 1,000s)	7	20	25	28	55
Mid-level or mixed	s.e.	0.54	0.75	0.66	0.58	1.56
	weighted n (in 1,000s)	828	609	470	502	565
All low	s.e.	—	—	—	—	3.42
	weighted n (in 1,000s)	40	59	41	24	24
Grade 9 mathematics						
High (geometry or higher)	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	37	32	34	40	93
Mid-level (prealgebra or algebra 1)	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	417	392	316	337	428
Low (no or low mathematics)	s.e.	—	—	—	—	—
	weighted n (in 1,000s)	423	272	193	186	132
School urbanicity						
Urban	s.e.	1.20	2.69	1.29	1.20	5.31
	weighted n (in 1,000s)	154	81	104	63	171
Suburban	s.e.	0.84	1.16	1.00	1.21	1.96
	weighted n (in 1,000s)	401	214	210	183	221
Rural	s.e.	0.78	0.99	1.06	0.76	1.28
	weighted n (in 1,000s)	323	400	228	316	262
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	1.49	1.97
	weighted n (in 1,000s)	—	—	—	56	70
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	0.85	2.50
	weighted n (in 1,000s)	—	—	—	350	420
Low (5 percent or less in NSLP)	s.e.	—	—	—	3.13	1.97
	weighted n (in 1,000s)	—	—	—	60	67
Not reported	s.e.	—	—	—	1.03	4.49
	weighted n (in 1,000s)	—	—	—	97	97

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Table A52. Standard errors for table 52: Percentage of high school graduates earning 3.0 or more occupational credits who met the New Basics core academic requirements, by selected characteristics, including special and protected populations status: Various years, 1982–98

		1982	1990	1992	1994	1998
Total	s.e.	0.58	1.86	1.28	1.84	3.13
	weighted n (in 1,000s)	1,205	1,076	918	928	1,147
Race/ethnicity						
American Indian/Alaska Native	s.e.	3.84	6.00	5.94	6.45	5.92
	weighted n (in 1,000s)	18	6	13	7	5
Asian/Pacific Islander	s.e.	3.63	4.50	5.89	4.19	5.23
	weighted n (in 1,000s)	12	27	34	23	31
Black, non-Hispanic	s.e.	1.45	4.40	3.29	3.07	6.27
	weighted n (in 1,000s)	130	151	106	121	168
Hispanic	s.e.	0.84	3.13	3.60	5.89	3.35
	weighted n (in 1,000s)	160	83	91	71	132
White, non-Hispanic	s.e.	0.72	1.91	1.50	2.10	3.34
	weighted n (in 1,000s)	872	774	671	655	809
Sex						
Male	s.e.	0.76	1.99	1.61	1.96	3.12
	weighted n (in 1,000s)	662	589	515	503	619
Female	s.e.	0.77	1.91	1.66	1.97	3.37
	weighted n (in 1,000s)	543	487	403	424	514
Disability status (grade 12)						
Has disability	s.e.	1.56	2.41	—	2.48	4.92
	weighted n (in 1,000s)	99	38	—	47	43
No indicated disability	s.e.	0.62	1.87	—	1.90	3.14
	weighted n (in 1,000s)	1,097	1,038	—	881	1,104
English proficiency (grade 12)						
Limited	s.e.	—	—	—	9.61	8.68
	weighted n (in 1,000s)	—	—	—	6	5
Proficient	s.e.	—	1.86	—	1.85	3.14
	weighted n (in 1,000s)	—	1,074	—	922	1,142
Grade-point average (GPA)						
High (greater than 3.5)	s.e.	3.43	4.02	3.25	3.46	2.93
	weighted n (in 1,000s)	71	56	53	73	131
Mid-level (2.0 to 3.5)	s.e.	0.66	1.90	1.36	1.95	3.15
	weighted n (in 1,000s)	847	778	701	689	911

See notes at end of table.

Table A52. **Standard errors for table 52: Percentage of high school graduates earning 3.0 or more occupational credits who met the New Basics core academic requirements, by selected characteristics, including special and protected populations status: Various years, 1982–98—Continued**

		1982	1990	1992	1994	1998
Low (less than 2.0)	s.e.	0.81	1.99	2.57	2.15	4.55
	weighted n (in 1,000s)	287	242	164	166	105
Academic coursework completed						
All high	s.e.	8.06	3.31	3.41	2.10	3.19
	weighted n (in 1,000s)	15	43	56	61	102
Mid-level or mixed	s.e.	0.60	1.84	1.35	1.86	3.17
	weighted n (in 1,000s)	1,134	944	798	821	992
All low	s.e.	—	1.46	1.82	2.18	2.61
	weighted n (in 1,000s)	53	78	55	36	38
Grade 9 mathematics						
High (geometry or higher)	s.e.	3.37	4.76	3.48	3.22	3.90
	weighted n (in 1,000s)	60	59	68	76	177
Mid-level (prealgebra or algebra 1)	s.e.	0.85	2.00	1.59	1.93	3.37
	weighted n (in 1,000s)	591	632	560	576	748
Low (no or low mathematics)	s.e.	0.64	1.97	1.23	2.15	2.95
	weighted n (in 1,000s)	554	384	290	276	222
School urbanicity						
Urban	s.e.	1.07	4.55	2.82	5.49	5.43
	weighted n (in 1,000s)	213	122	189	101	284
Suburban	s.e.	0.98	2.45	2.04	2.52	2.89
	weighted n (in 1,000s)	556	343	358	325	407
Rural	s.e.	0.88	2.49	2.11	2.73	5.84
	weighted n (in 1,000s)	436	611	371	502	456
School poverty level						
High (greater than 50 percent in NSLP)	s.e.	—	—	—	4.40	7.46
	weighted n (in 1,000s)	—	—	—	84	129
Middle (greater than 5 to 50 percent in NSLP)	s.e.	—	—	—	2.60	3.95
	weighted n (in 1,000s)	—	—	—	572	716
Low (5 percent or less in NSLP)	s.e.	—	—	—	4.96	9.32
	weighted n (in 1,000s)	—	—	—	105	127
Not reported	s.e.	—	—	—	3.34	5.77
	weighted n (in 1,000s)	—	—	—	168	174

—Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and High School Transcript Studies (HSTS), 1990, 1994, and 1998.

Appendix B—Glossary

Academic subjects: The high school academic curriculum is divided into the main subject areas listed below, corresponding to the 1998 revised Secondary School Taxonomy categories (Bradby and Hoachlander 1999). The examples given are not exhaustive of the courses included in each subject area.

Mathematics: Includes courses in general mathematics, consumer mathematics, prealgebra, algebra 1, geometry, algebra 2 and 3, trigonometry, analytical geometry, mathematical analysis, precalculus, calculus, Advanced Placement (AP) calculus, International Baccalaureate (IB) mathematics, probability and statistics, unified mathematics (an integrated course sequence usually taught over 2 or 3 years), and occupationally related mathematics.

Science: Includes courses in survey science, biological science (including biology and some specialized courses such as botany, zoology, and anatomy and physiology), chemistry, physics, earth science, physical science, and engineering.

English: Includes survey courses (including language skills courses and English 9–12), as well as courses in literature, composition and writing, speech, and English as a Second Language.

Social studies: Includes courses in U.S. history, world history, government and politics, economics, behavioral sciences (including psychology and sociology), geography, social studies, American studies, area studies, women's studies, law, anthropology, and philosophy.

Fine arts: Includes courses in visual arts, music, dance, and theater arts.

Foreign (non-English) languages: Includes courses in Spanish, French, German, Latin, Italian, and other non-English languages and literatures.

Academic coursework completed: This variable describes whether students completed all low- or all high-level mathematics, science, and English coursework in high school, or some other combination of coursework (either mid-level or mixed coursework) in these subjects, according to the following definitions.

Low-level mathematics: Includes no mathematics; remedial mathematics; general, basic or consumer mathematics; technical or vocational mathematics; pre-algebra; algebra 1 taught over the course of 2 academic years; and informal geometry; but no higher mathematics.

Low-level science: Includes no science, remedial science, physical science, earth science, unified science, astronomy, geology, environmental science, oceanography, general physics, basic biology 1, and consumer or introductory chemistry, but no higher science.

Low-level English: Includes at least some below-grade or low academic level English courses.

High-level mathematics: Includes algebra 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.

High-level science: Includes chemistry 1 and 2 and physics 1 and 2.

High-level English: Includes at least some honors-level English courses.

Advanced concentrator: Graduate earning 3.0 or more credits in high school in one of the 10 broad occupational program areas listed under **occupational programs**, with at least 1.0 credit in a second- or higher-level or cooperative education course in that program area.

Carnegie unit: A standard of measurement used for secondary or high school education that represents the completion of a course that meets one period per day for 1 year. See **credit**.

College-preparatory coursework: Public high school graduates were classified as completing college-preparatory coursework if they completed 4.0 credits in English; 3.0 credits in mathematics at the algebra 1 level or higher; 2.0 credits in biology, chemistry, and/or physics; 2.0 credits in social studies with at least 1.0 credit in U.S. or world history; and 2.0 credits in a single foreign (non-English) language during high school.

Core academic subjects: Includes coursework in mathematics, science, English and social studies, as defined under **academic subjects**.

Credit: Term used in place of a "Carnegie unit" to represent the completion of a course that meets one period per day for 1 year. See **Carnegie unit**.

Disability status (grade 12): Indicates whether or not a student was reported (by the student in 1982 and by school staff in 1990, 1994, and 1998) to have a physical or educational disability in grade 12.

English proficiency (grade 12): Indicates whether a student was reported by school staff to be limited English proficient or English proficient in grade 12.

Family and consumer sciences education: Consists of courses intended to prepare students for roles outside the paid labor market, including home economics, child development, foods and nutrition, and clothing. Home economics-related courses that prepare students for the paid labor market are included under **occupational education**, in the **child care and education**, **food service and hospitality**, and **personal and other services** program areas.

General labor market preparation: Consists of courses that teach general employment skills but do not have as their primary objective preparing students for paid employment in a specific field. These courses include typewriting, word processing, industrial arts, career exploration, general work experience, and technology education.

Grade 9 mathematics: Students were classified into the following three categories according to the highest-level mathematics course they took in grade 9.

> **High:** Includes geometry, algebra 2 and 3, trigonometry, analytical geometry, linear algebra, probability, statistics, precalculus, introduction to analysis, and calculus.
>
> **Mid-level:** Includes prealgebra and algebra 1.
>
> **Low:** Includes no mathematics, remedial mathematics; general, basic, or consumer mathematics; and technical or vocational mathematics; but no higher mathematics.

Grade-point average (GPA): GPA was calculated for all courses that graduates took during high school and was based on the grades recorded on student transcripts.

National School Lunch Program (NSLP): A federal program that provides free or reduced-price lunches to students based on household income.

New Basics core academic requirements: The publication, *A Nation at Risk* (National Commission on Excellence in Education 1983), recommended that high school graduation requirements be strengthened, and that, at a minimum, all students take 4 years of English; 3 years each of mathematics, science, social studies; and one-half year of computer science. The "core academic requirements" referred to in this report include the recommendations for English, mathematics, science, and social studies.

Occupational concentrator: Graduate earning 3.0 or more credits in high school in one of the 10 broad occupational program areas listed under **occupational programs**. In some cases, the report also examines trends in concentrating (earning 3.0 or more credits) in the 18 narrow occupational program areas listed under **occupational programs**.

Occupational education: Also called **specific labor market preparation**, consists of courses that teach skills and provide information required in a particular occupation or cluster of occupations. Courses are organized into 10 broad and 18 narrow occupational program areas. See **occupational programs**.

Occupational programs: The 1998 Secondary School Taxonomy organizes high school occupational programs into the following 10 broad and 18 narrow program areas. The examples given are not exhaustive of the courses offered in each area. See also figure 1.

Agriculture (and renewable resources): Includes courses in agricultural mechanics, horticulture, animal sciences, and environmental management.

Business: Includes the following two narrow program areas of business services and business management:

Business services: Includes courses in bookkeeping, accounting, data entry, secretarial administration, and office procedures.

Business management: Includes courses in business and management and in banking and finance.

Marketing: Includes courses related to the selling and distribution of goods and services, including distributive education, distribution and marketing, fashion merchandising, and entrepreneurship.

Health care: Includes courses intended to prepare students for careers in the health professions, such as health occupations, dental assistant, medical laboratory technologies, and practical nursing.

Protective services (and public services): Includes courses in criminal justice, fire protection, public administration, and social work.

Technology: Includes the following three narrow program areas of computer technology, communications technology, and other technology:

> **Computer technology:** Includes coursework in computer applications, computer programming, data processing, computer science and systems, and computer mathematics.
>
> **Communications technology:** Includes coursework in broadcast management, film making, and radio and television production.
>
> **Other technology:** Includes coursework in electronic technology, industrial production technology, chemical technology, and engineering technologies.

Trade and industry: Includes the following four narrow program areas of construction, mechanics and repair, precision production, and transportation:

> **Construction:** Includes coursework in electricity, masonry, carpentry, plumbing, and building construction.
>
> **Mechanics and repair:** Includes coursework in industrial mechanics, radio and TV repair, air conditioning and heating, power mechanics, auto mechanics, and aviation powerplant.
>
> **Precision production**: Includes the following three narrow program areas of print production, materials production, and other precision production:
>
>> **Print production:** Includes coursework in drafting, graphics, and printing.
>>
>> **Materials production:** Includes coursework in metals, plastics, and woodworking.
>>
>> **Other precision production:** Includes coursework in electronics, leatherwork, meatcutting, and commercial photography.
>
> **Transportation:** Includes coursework in aeronautics, aviation technology, marine mechanics, transportation technology, and vehicle and equipment operation.

Food service and hospitality: Includes coursework in food marketing/distribution, hospitality, culinary arts, and hotel management.

Child care and education: Includes coursework in child care services, child development, education, and library science.

Personal and other services: Includes coursework in cosmetology, building and grounds maintenance, clothing and textiles, housing and interior design, and home economics occupations.

Race/ethnicity: Classification indicating general racial or ethnic heritage based on self-identification:

American Indian/Alaska Native: A person having origins in any of the peoples of North America and maintaining cultural identification through tribal affiliation or community recognition.

Asian/Pacific Islander: A person having origins in any of the peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands including, for example, China, India, Japan, Korea, the Philippine Islands, and Samoa.

Hispanic: A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.

Non-Hispanic Black: A person having origins in any of the black racial groups in Africa, excluding persons of Hispanic origin. For simplicity's sake, persons in this group are referred to as Blacks in this report.

Non-Hispanic White: A person having origins in any of the peoples of Europe, North Africa, or the Middle East, excluding persons of Hispanic origin. For simplicity's sake, persons in this group are referred to as Whites in this report.

School poverty: Students were classified into the following categories according to the percentage of students who participated in the **National School Lunch Program** (NSLP) at their 12th-grade school.

High: Greater than 50 percent of students participated in the NSLP at the 12th-grade school.

Middle: Greater than 5 to 50 percent of students participated in the NSLP at the 12th-grade school.

Low: 5 percent or fewer of students participated in the NSLP at the 12th-grade school.

Not reported: The 12th-grade school did not report the percentage of students who participated in the NSLP.

School urbanicity: Students were classified according to the location of their 12th-grade school, based on the following definitions derived from U.S. Census Bureau classifications.

Urban: A school was located in the central city of a Consolidated Metropolitan Statistical Area (CMSA) or Metropolitan Statistical Area (MSA), regardless of the size of the city.

Suburban: A school was located in a CMSA or MSA or a large or mid-size city and defined as urban fringe by the Census Bureau; or in an incorporated place or Census-designated place with a population greater than 25,000 and located outside a CMSA or MSA.

Rural: A school was located in an incorporated place or Census-designated place with a population less than 25,000 and located outside a CMSA or MSA; or in a "non-place" territory outside a CMSA or MSA and defined as rural by the Census Bureau.

Specific labor market preparation: Also called **occupational education**, consists of courses that teach skills and provide information required in a particular occupation or cluster of occupations. Courses are organized into 10 broad and 18 narrow occupational program areas. See **occupational programs**.

Vocational/technical education: Organized educational programs, services, and activities that are directly related to the preparation of individuals for paid or unpaid employment or for additional preparation for a career that requires other than a bachelor's or an advanced degree. This publication refers to the following three types of vocational education at the high school level: **family and consumer sciences education**, **general labor market preparation**, and **specific labor market preparation** or **occupational education**.

Appendix C—Technical Notes and Methodology

Sources of Data

The data for this report came from five studies conducted by NCES between 1982 and 1998. These studies include the High School and Beyond (HS&B) Sophomore Cohort, First Follow-up Survey and High School Transcript Study, 1982; the National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up Survey and High School Transcript Study, 1992; and the High School Transcript Studies (HSTS) of 1990, 1994, and 1998 that were conducted as part of the National Assessment of Educational Progress (NAEP).

For all transcripts and samples used in this report, a course identification code number, based on the Classification of Secondary School Courses (CSSC), was assigned to each course taken by a student. *The 1998 Revision of the Secondary Schools Taxonomy* (Bradby and Hoachlander 1999) further classified these CSSC codes. This taxonomy served to standardize all transcript data included in the analysis.

The analysis sample from each transcript study was restricted to the subset of students who were public high school graduates and who had a complete set of transcripts. A complete transcript was defined as one that recorded 16 or more total credits (Carnegie units), with a positive, non-zero number of credits completed in English.

One additional step was taken to ensure that the analysis samples were comparable across the five trend years. This was necessary because the HS&B and NELS studies excluded students with the most severe disabilities, where it was determined by school staff that these students were unable to complete the lengthy student questionnaires that were a part of these longitudinal studies. In order to ensure comparability, graduates with special education diplomas were excluded from the HSTS samples. This procedure was first determined by Gifford et al. (1989) and then again by Tuma (1996) to produce comparable samples across HS&B, NELS, and HSTS. Thus, the samples used for this trend analysis were consistent with the population of public high graduates, including students with disabilities, who earned regular or honors diplomas in each of the study years. This restriction is consistent with NCES reports on high school vocational/technical coursetaking published over the last decade and is consistent with NCES procedures for transcript studies (Alt and Bradby 1999).

In addition, there may be some minor coding differences between NELS and the other transcript data that may affect the data for 1992. NCES plans to study this issue. The following section provides a brief description of each study.

High School and Beyond

The High School and Beyond (HS&B) longitudinal survey was first administered in 1980 to a stratified, nationally representative sample of approximately 30,000 high school sophomores and 28,000 high school seniors from more than 1,000 high schools. Follow-up surveys were administered in 1982, 1984, 1986, and 1992. This report focused on the sophomore cohort from the First Follow-up Survey conducted in 1982. For purposes of this report, the analysis sample was limited to public high school students using the variable HSTYPE. This group was reduced further by including only high school graduates, defined by using a composite of graduation status variables RESNLEFT, FUSTTYPE, and SY12 from the Transcript, First Follow-up and Second Follow-up surveys, respectively.

The First Follow-up and High School Transcript Study were used to examine coursetaking patterns. The analysis sample included 9,598 public high school sophomores who graduated in 1982 and had complete transcripts available. Standard errors were computed using the Taylor series approximation method. More information on the First Follow-up and Transcript data files can be found in *High School and Beyond, 1980 Sophomore Cohort, First Follow-Up (1982), Data File User's Manual* (Jones et al. 1983) and *High School and Beyond Transcripts Survey (1982), Data File User's Manual* (Jones et al. 1984).

National Education Longitudinal Study of 1988

The National Education Longitudinal Study of 1988 (NELS:88) is another major longitudinal study sponsored by NCES. The Base Year Survey was administered to about 24,000 8th-graders in more than 1,000 schools with an 8th-grade class. The First, Second, Third, and Fourth Follow-ups revisited the same sample of students in 1990, 1992, 1994, and 2000, when most of the 1988 8th-graders were in the 10th grade, 12th grade, and then 2 and 6 years after they graduated from high school. Unlike HS&B, for each in-school follow-up (that is, 1990 and 1992), the student sample was "freshened" to obtain a representative, cross-sectional grade-cohort sample (that is, 10th graders in 1990 and 12th graders in 1992). In addition, as a part of the Second Follow-up Survey, high school transcripts were collected for the members of the 12th-grade cohort in the fall of 1992.

The report used the Second Follow-up Survey and High School Transcript Study to examine coursetaking patterns. Transcript data were available for about 17,200 students. For purposes of this report, the analysis sample was limited to public high school students using G12CTRL2. This group was reduced further by including only high school graduates using the variable F2RREAS1. The analysis sample included 11,788 public high school students who graduated in 1992 and had complete transcripts available. Standard errors were computed using the Taylor series approximation method. For more information on the Second Follow-up Survey of NELS:88, see *Second Follow-up: Transcript Component Data File User's Manual* (Ingels et al. 1995).

High School Transcript Studies of 1990, 1994, and 1998

This report used three national transcript studies conducted in 1990, 1994, and 1998 as part of the congressionally mandated NAEP, funded by the Office of Educational Research and Improvement (OERI), U.S. Department of Education, and conducted by NCES. The overall goal of NAEP is to determine the nation's progress in education. Conducted in association with NAEP, the High School Transcript Studies (HSTS) provided coursetaking and demographic information for a stratified, nationally representative sample of high school seniors. The 1990 transcript file included the high school transcripts of 21,531 seniors from about 330 schools, while the 1994 transcript file included the high school transcripts of 24,844 seniors from 340 schools. The 1998 HSTS collected transcript data from 25,422 seniors in 264 high schools. Like HS&B and NELS:88, the availability of complete high school transcripts and students' graduation status defined the NAEP student samples included in this report. The analysis sample was limited to public high school students using the variable STYPE. This group was reduced further by including only high school graduates with regular or honors diplomas using the variable EXSTAT.

The final analysis samples were 16,507 for 1990; 23,706 for 1994; and 23,176 for 1998. Standard errors were computed using the jackknife replication method. For further information about NAEP High School Transcript Studies, see *The 1998 High School Transcript Study User's Guide and Technical Report* (Roey et al. 2001a); and *The 1998 High School Transcript Study Tabulations: Comparative Data on Credits Earned and Demographics for 1998, 1994, 1990, 1987, and 1982 High School Graduates* (Roey et al. 2001b).

Description of Key Population Variables

For each data set described above, variables were constructed to classify graduates according to their special and protected population status. When a comparable variable could not be constructed for a particular data set, the variable was not reported for the data set and "not available" was inserted in the tables in the appropriate places. Procedures used to construct each key population variable are described below.

Race/ethnicity—Variables used included RACE (HS&B); F2RACE1 (NELS:88); and DRVDRACE (HSTS 1990, 1994, 1998).

Sex—Variables used included SEX (HS&B); F2SEX (NELS:88); and SEX (HSTS 1990, 1994, 1998).

Disability status (grade 12)—For HS&B, disability status was constructed from a number of student-reported items. Construction of a disability status variable for NELS:88 based on similar parent-reported items produced a noncomparable variable, which was dropped from the analysis. For the HSTS data sets, HCFLAG was used, which was derived from school-reported information.

English proficiency (grade 12)—Variables used included LEP (HSTS 1990); QLEP (HSTS 1994); and Q02 (HSTS 1998), which were based on school-reported information. Comparable variables were not available for HS&B and NELS:88.

Grade-point average (GPA)—This variable indicates the GPA for all courses that graduates took during high school. It was calculated directly from transcript grades for HS&B and NELS. The variable GPA_C was used for the HSTS data sets.

Academic coursework completed—This variable was constructed based on the mathematics, science, and English courses with greater than 0.0 credits listed on students' transcripts. The "low" and "high" categories described in the glossary under "academic coursework completed" were based on variables constructed to place students in different levels of an academic "pipeline." These pipelines organize courses in each subject based on the normal progression and difficulty of courses within that subject area (see Levesque 2003).

Grade 9 mathematics—As described in the glossary, this variable was constructed based on the highest mathematics course for which a student received greater than 0.0 credits in grade 9.

School urbanicity—Variables used included SCHURB (HS&B); G12URBAN3 (NELS:88); and URBAN (HSTS 1998). Comparable variables were not available for HSTS 1990 and 1994.

Percent in school lunch program—Variables used to construct this measure of school poverty included Q29 (HSTS 1994) and Q46 (HSTS 1998). Comparable variables were not available for HS&B, NELS:88, and HSTS 1990.

Accuracy of Estimates

The estimates in this report are derived from a sample and subject to two broad classes of error—nonsampling errors and sampling errors. Nonsampling errors occur not only in sample surveys but also in complete censuses of entire populations. Nonsampling errors can be attributed to a number of factors: inability to obtain complete information about all students in all institutions in the sample (some students or institutions refused to participate, or students or school staff participated but answered only certain items); ambiguous definitions; differences in interpreting questions; inability or unwillingness to give correct information; mistakes in recording or coding data; and other errors of collecting, processing, and sampling data. Although nonsampling errors due to questionnaire and item nonresponse can be reduced somewhat by adjusting sample weights, correcting all the forms of nonsampling errors that may be operating, or gauging the effects of these errors, is usually difficult.

Sampling errors occur because observations are made only on samples of students, not on entire populations. Surveys of population universes are not subject to sampling errors. Estimates based on a sample will differ somewhat from those that would have been obtained by a complete census of the relevant population using the same survey instruments, instructions, and procedures. The standard error is a measure of the variability due to sampling when estimating statistics. Standard errors can be used as a measure of the precision expected from a particular sample. If all possible samples were surveyed under similar conditions, intervals of 1.96 standard errors below to 1.96 standard errors above a particular statistic would include the true population parameter being estimated in about 95 percent of the samples. In addition, the standard errors for two sample statistics can be used to estimate the precision of the estimate of the difference between the two statistics and to help determine whether the difference based on the sample is large enough so that it can be assumed to represent a difference in the population.

Because HS&B, NELS:88, and NAEP data were collected using complex sampling designs, the standard errors of the estimates from these surveys are typically different than would be expected if the sample had been a simple random sample and the observations were independent and identically distributed random variables. Not taking the complex sample design into account can lead to an underestimate of the sampling variance associated with an estimate. In order to generate accurate standard errors for the statistics reported in this study, the Taylor series approximation method and jackknife replication methods were used. In particular, standard errors of estimates from the HS&B and NELS:88 data were computed using the Taylor series approximation and standard errors of estimates from the HSTS 1990, 1994, and 1998 data were computed using the jackknife replication method. For more information about these methods see Wolter (1985).

Statistical Procedures

The comparisons in the text have all been tested for statistical significance to ensure that differences are larger than those that might be expected due to sampling variance. Two types of statistical tests have been used and reported in the text.

Testing the difference between two means or percentages. The Student's *t* statistic was used to test the likelihood that the differences between two independent percentages were larger than would be expected due to sampling error. The Student's *t* values can be computed for comparisons using the estimates in the report's tables with the following formula:

$$t = \frac{E_1 - E_2}{\sqrt{(se_1)^2 + (se_2)^2}} \qquad (1)$$

where E_1 and E_2 are the estimates to be compared and se_1 and se_2 are their corresponding standard errors. This formula is valid only for independent estimates. When the estimates are not independent (for example, when comparing estimates that are parts of a percentage distribution), a covariance term must be added to the denominator of the *t*-test formula. Because the actual covariances were not known, it was assumed that the estimates were perfectly negatively correlated. Consequently, $2*(se_1*se_2)$ was added within the square root of the denominator of the *t*-test formula for dependent estimates.

Testing the difference between differences. Another statistical test used in this report assessed the difference between two difference estimates. For example, to test whether the gap between males and females in a specific year (for example, 1982) differed significantly from the gap between these two groups in another year (for example, 1998), a test of the difference between differences was performed using the following formula:

$$t = (E_{11}-E_{21})-(E_{12}-E_{22}) \,/\, sqrt[(se_{11}^2+se_{21}^2)+(se_{12}^2+se_{22}^2)] \qquad (2)$$

where E_{11} and E_{21} are the estimates for the two comparison groups at time 1 (e.g., E_{11}-E_{21} is the difference between males and females at time 1), E_{12} and E_{22} are the estimates for the two comparison groups at time 2 (e.g., E_{12}-E_{22} is the difference between males and females at time 2), and se_{11}, se_{21}, se_{12}, and se_{22} are their corresponding standard errors.

***T* values and alpha levels**. Generally, whether a difference is considered statistically significant is determined by calculating a *t* value for the difference, and comparing this value to published tables of values at certain critical levels, called *alpha* levels. The *alpha* level is an a priori statement of the probability of inferring that a difference exists when, in fact, it does not. The *alpha* level used in this report is .05; differences discussed in the text have been tested and found significant at this level. Two-tailed tests were performed.

In order to make proper inferences and interpretations from the statistics, several points must be kept in mind. First, comparisons resulting in large *t* statistics may appear to merit special consideration. However, this is not always the case because the size of the *t* statistic depends not only on the observed differences between the two estimates being compared but also on the standard error of the difference. Thus, a small difference between two groups with a much smaller standard error could result in a large *t* statistic, but this small difference is not necessarily noteworthy.

Second, when multiple statistical comparisons are made, it becomes increasingly likely that a finding of a statistically significant difference is erroneous. Even when there is no difference in the population, at an *alpha* level of .05, there is still a 5 percent chance of concluding that an observed *t* value representing one comparison in the sample is large enough to be statistically significant. As the number of comparisons increases, so does the risk of making such an error in inference.

To guard against errors of inference based upon multiple comparisons, the Bonferroni procedure to correct significance tests for multiple contrasts was used. This method corrects the significance (or *alpha*) level for the total number of contrasts made with a particular classification variable. For each classification variable, there are K possible contrasts (or nonredundant pairwise comparisons), where K=(N*(N–1)/2) and N is the number of categories in the variable (e.g., because the school urbanicity variable has 3 categories (N=3), there are (3*2)/2=3 possible comparisons among the categories). The Bonferroni procedure divides the *alpha* level for a single *t* test (for example, .05) by the number of possible pairwise comparisons in order to provide a new *alpha* that adjusts for all possible multiple comparisons.

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